I A P

INTELLIGENT AUSTRALIA PRODUCTIONS

Pursuing Excellence

Brilliant Maths Puzzles

for 8 - 9 year olds

Revision • Consolidation • Fun

WRITTEN BY RON SHAW

EDUCATIONAL EXCELLENCE

THE ACTIVITIES IN THIS BOOK ADDRESS MANY OUTCOMES IN THE SYLLABUS

Brilliant Maths Puzzles for 8 and 9 year olds
Intelligent Australia Productions

First published in 2007 by Intelligent Australia Productions

ISBN 0-9758492-2-0
ISBN 978-0-9758492-2-4

IAP 013

Intelligent Australia Productions
PO Box 670
Hillarys, WA 6923
Australia

Tel: (08) 9307 8365
Fax: (08) 9402 2339
Email: intelligent.australia@yahoo.com

This book is dedicated to:
Shenise

Intelligent Australia Productions is committed to raising standards in Literacy and Numeracy in Australian schools.

- Postal Address

IAP
PO Box 670
Hillarys, WA
Australia 6923

- Email

intelligent.australia@yahoo.com

- Telephone

(08) 9307 8365 Int'l (618) 9307 8365

- Fax

(08) 9402 2339 Int'l (618) 9402 2339

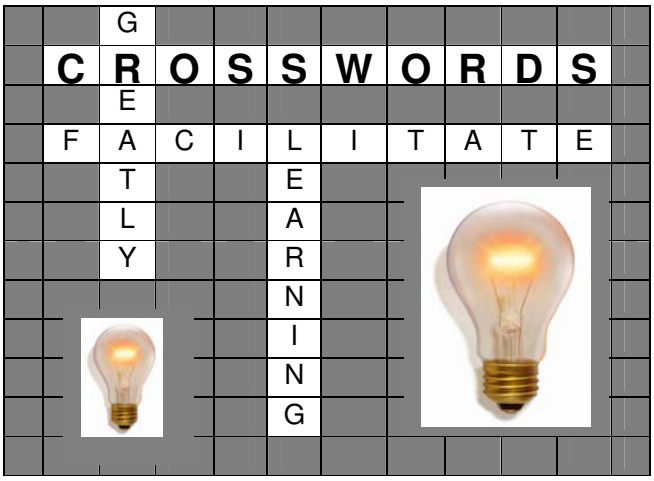
Intelligent Australia Productions is committed to raising standards in Literacy and Numeracy in Australian schools.

Brilliant Maths Puzzles for 8 and 9 year olds

Teacher's Notes

Foreword

Over hundreds of years, across many lands, crosswords have combined successful learning with fun.
The sense of achievement in solving a clue is surpassed only by the successful completion of the crossword itself.



Why 'Brilliant'?

When the idea for this book first arose it was discussed with a long-serving junior primary school teacher. Would teachers of lower primary grades consider worksheets that integrated Maths, Reading, Spelling and Logical Thinking too much for their students to handle? "Oh, no, not at all," came the reply, "the concept is just brilliant!"

The Age Range

All teachers know that in every class of children there is a wide range of abilities. So in a book catering for both 8 and 9 year olds there needs to be graded exercises, suited to younger students of moderate ability, older students who are highly capable, and all those in between. Thus, the puzzles in the book range in degree of difficulty from *Easy* through to *Challenging* and are marked thus:

★ = Easy ★★ = Medium ★★★ = Challenging

About this Book

The puzzles in this book -designed to reinforce mathematical terms, concepts and skills- provide a fun alternative to traditional maths revision activities. The book provides students with a new, effective method of consolidating maths concepts that cover the whole spectrum of the curriculum; there is a crossword to consolidate almost every Maths concept.
With the clues in most crosswords in the form of mini stories the puzzles have been designed to give students practise in Maths, Reading, Writing, Spelling and Logical Thinking.
Some of the puzzles are ideal for revision and consolidation while others provide stimulating 'higher-thinking' challenges.
The puzzles are clearly suitable for in-class exercises but are they equally appropriate as Homework activities? Yes, most definitely.
Solving puzzles of any kind is a nice way for children and their parents to spend quality learning time together.

Method of 'Attack'

1. Photocopy puzzle and distribute to all students.
2. Spend a few minutes making sure children understand what is required and explaining what the puzzle is all about.
3. Have one student read the first clue. Then ask, "Are there any questions about that?" Do not ask for the clue's answer.
4. Choose another student to read the next clue. And so on until all clues have been read out.

NB: Tell students that two-word answers (which are marked as such) need a hyphen.

About the Author

Ron Shaw's 30 + educational books are used by teachers in English-speaking countries on four continents.
Ron, a graduate of Claremont Teachers College (Perth) and the Australian National University (Canberra), was a senior teacher for many years before venturing into educational publishing. Ron has been accepted into membership of the Australian College of Educators, the Australian Teaching Council and the Australian Mathematical Society.

We know that your students will enjoy completing these stimulating puzzles.

Learn well. Have fun!

The Editors,
Intelligent Australia Productions

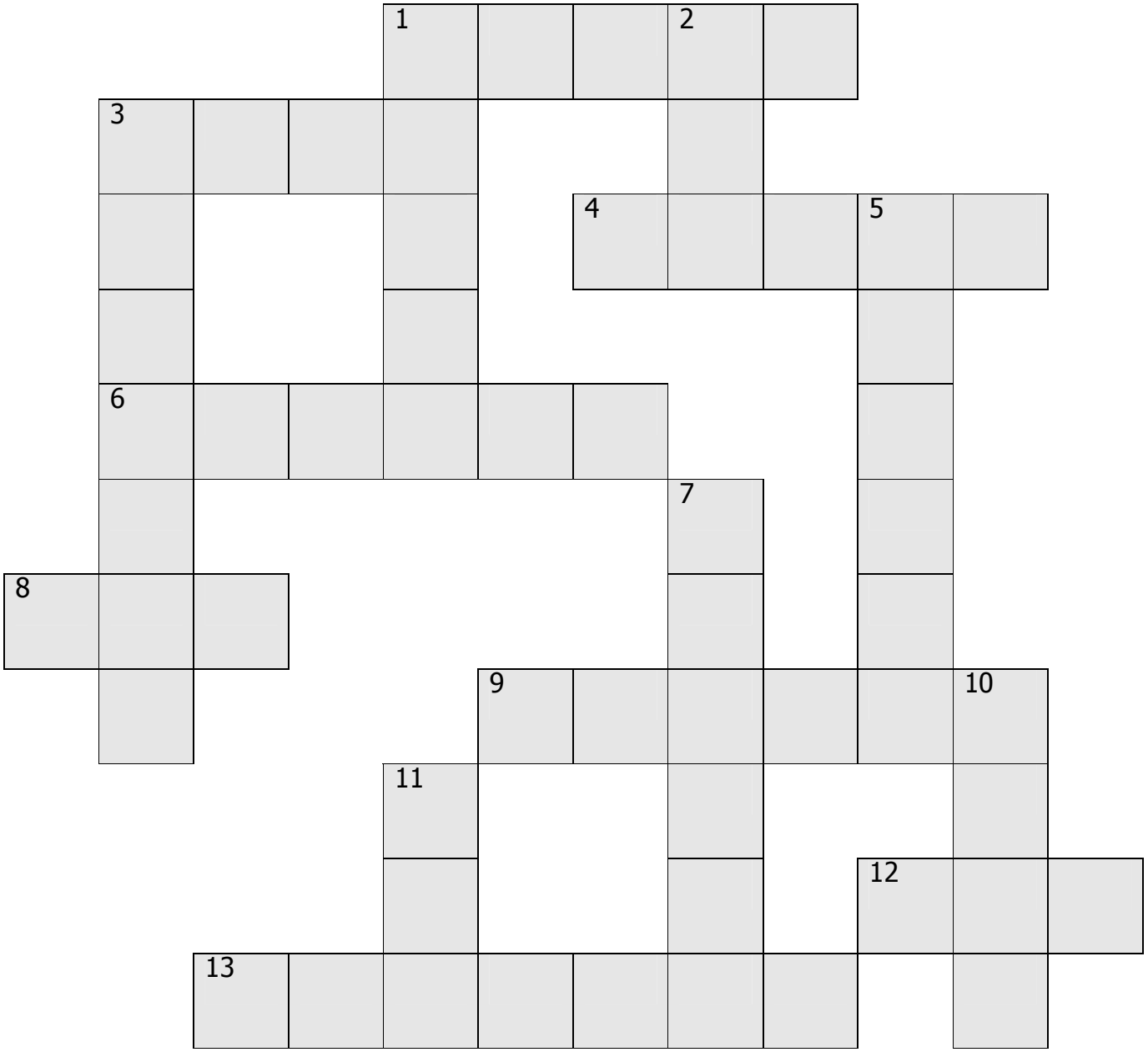
Contents

Concept	Theme	Page
Digital and Analogue Time	*Telling the Time*	4-5
Ordinal Numbers to 100th	*Sport*	6-7
Adding and Subtracting 3-Digit Numbers	*On the Farm*	8-9
Lines of Symmetry	*n/a*	10-11
Probability	*Coin and Dice*	12-13
3-D Objects	*n/a*	14-15
Sharing and Division	*Miscellaneous*	16-17
2-Digit Numbers	*At School*	18-19
Fractions	*The Circus*	20-21
More 3-D Objects	*n/a*	22-23
More Adding and Subt' 3-digit Numbers	*Collecting Stamps*	24-25
Smaller Time Units	*Fishing with Pedro*	26-27
Multiplication and Division Facts	*Reading books*	28-29
Metric Conversions	*n/a*	30-31
Mass and Weight	*n/a*	32-33
Multi-operational Problems	*Sports and Games*	34-35
Graphs and Data	*Children's Party*	36-37
More Fractions	*Fruit*	38-39
Money and Graphing	*Saving Money*	40-41
Two-step Calculations	*At the Zoo*	42-43
Real-Life Applications	*Lake Excursion*	44-45
Doubling and Halving	*In the Kitchen*	46-47
Time: Larger Units	*Holidays*	48-49
Comparisons and Quantifiers	*Fun in the Snow*	50-51
Finding Directions	*From House to House*	52-53
Solutions		54-78

Digital and Analogue Time

Degree of difficulty

★★



Across

1. If the hour hand on the clock goes from 1 to 2 how many minutes pass by?

3. If the minute hand on a watch goes from 10 to 11 how many minutes pass by?

4. How many minutes between 11 o'clock and 11.40?

6. If the big hand is on the 4 and the small hand is just past the 3, the time is ..... minutes past three.

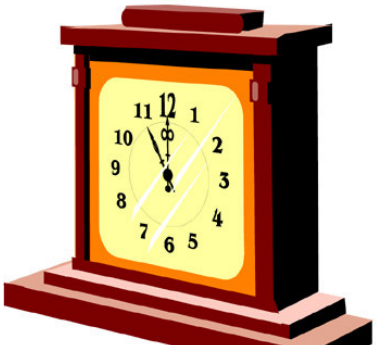
8. How many minutes between 10.20 and 10.30?

9. If the time is 5 minutes to 8 what number on the clock is the big hand pointing to?

12. How many hours pass by if the minute hand goes from the 2 and then all around the clock and back to the 2?

13. Between 11 o'clock and half past 11 there are thirty

..... .



Down

1. How many minutes between 8.18 and 8.25?

2. If the time is 9.10 what number on the clock is the minute hand pointing to?

3. How many minutes ahead of 11.15 is half past 11?

5. How many minutes does it take to get from 10.26 to 10.38?

7. At 6 o'clock the big hand on a watch is pointing to the number

..... .

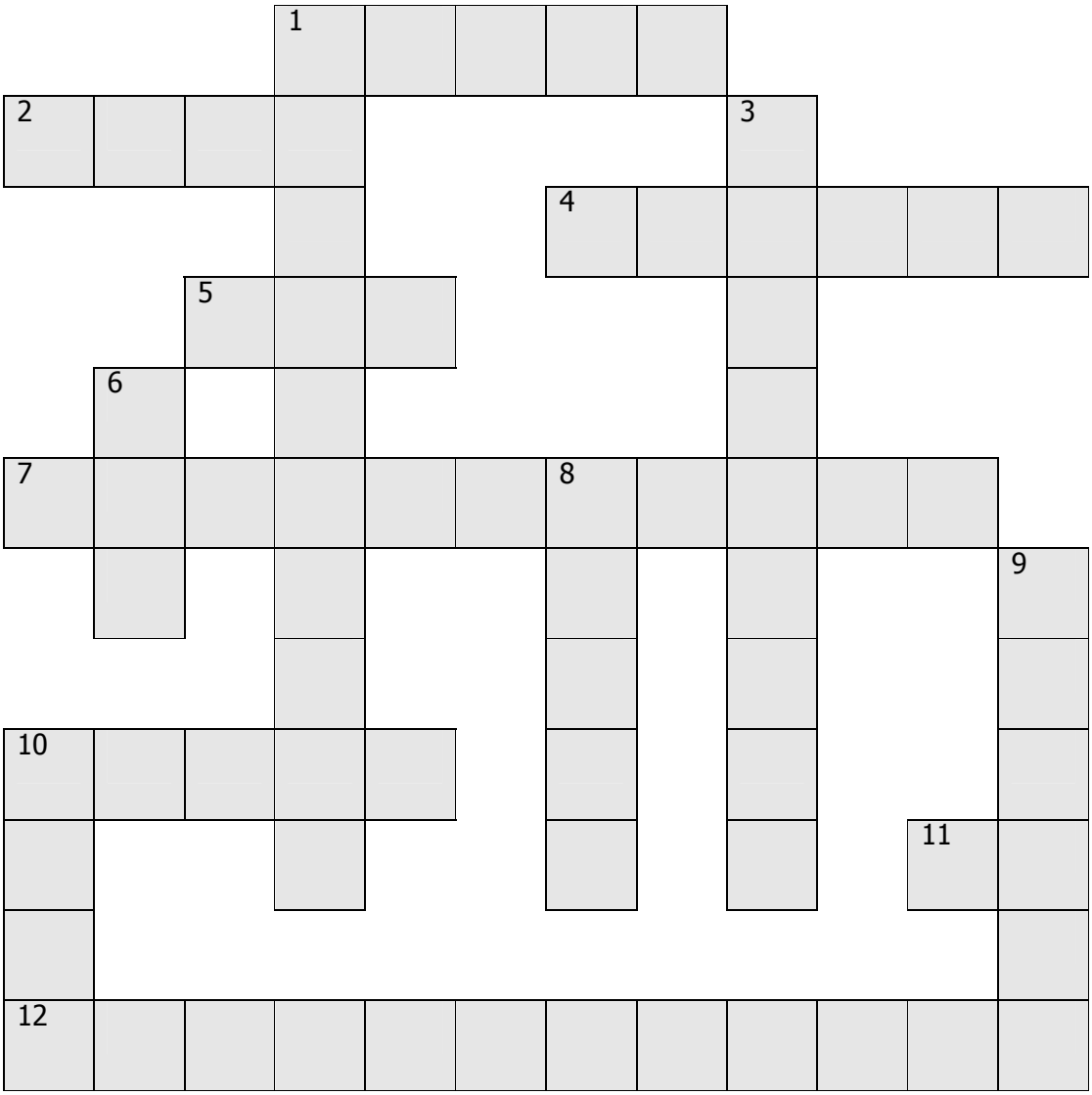
10. How many minutes until 6.30 if it is twenty-one minutes past 6?

11. If there are another twenty minutes to go until it is ten past six, what number is the big hand now on?

Ordinal Numbers to 100th

Degree of difficulty

★★



Across

1. Five runners finished ahead of Sally in the race. This means Sally came ……..

2. The athletics carnival was held on the fifty-eighth day of the year and the swimming carnival on the sixty-third day of the year. How many days between the two carnivals?

4. Tina finished her race four places ahead of the eighth placegetter. Tina finished …… ?

5. Joe came twelfth in his race and Billy came first in the same race. How many children finished between Joe and Billy?

7. Suzie was the fifty-third person to enter the sports stadium. Teresa was another eight places behind Suzie. This means that Teresa was the …… person to enter the stadium. *hyphen*

10. Bonnie was the first child to finish her race. After Bonnie there were seven more children and then came Amy. Amy was the …… child to finish the race.

11. Sandy came sixth and Amanda came tenth in the race. Did four children finish between Sandy and Amanda?

12. Toby was the ninetieth child to leave the arena. Danny left the arena seven places before Toby. So Danny was the …… child to leave the arena. *hyphen*

Down

1. It was the school's sixty-ninth annual sports carnival. Next year the school will have its …… sports carnival.

3. Jenny scored the ninety-ninth point for her team. The next point scored will be the …… .

6. Chris finished fourteenth which is …… places further back than eighth.

8. Two places after twenty-third is twenty-…….. .

9. Fourteen children ran in the race. Jessie finished ahead of twelve children. Jessie came …… .

10. How many places between ninetieth and one hundredth?

Adding and Subtracting 3-digit Numbers

- some carrying involved –

Degree of difficulty

★★

If you lay eggs today I'll eat them tomorrow. If you don't I'll eat ***chicken****!*

On the Farm

Across

1. Matt and Belinda were at their Grandpa's farm. Grandpa has 132 sheep in the small paddock and 363 sheep in the larger paddock. Altogether that's four hundred and ..... sheep. *hyphen*

4. *(see question 1)* There are two hundred and thirty ..... more sheep in the larger paddock.

6. Belinda helped her Granny pick strawberries. On Saturday they gathered 445 strawberries and on Sunday they gathered 367 strawberries. This means they gathered eight hundred and ..... strawberries on the weekend.

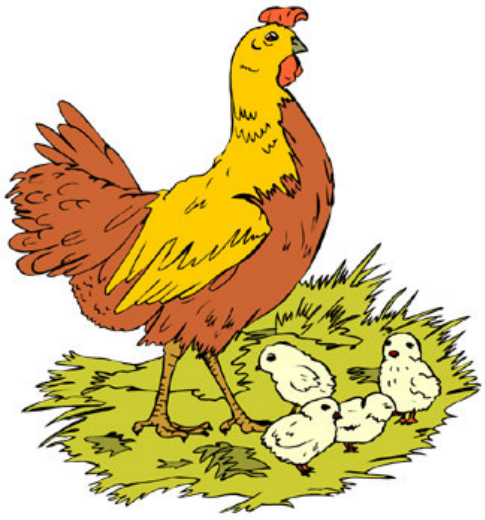
9. On Monday Grandpa collected 276 litres of milk from his cows and Matt collected 130 litres. Altogether they collected four hundred and ..... litres.

11. There are 589 fence posts around the farm. 121 need replacing. This means there are four hundred and ..... fence posts that don't need replacing. *hyphen*

12. Belinda painted 156 fence posts and Matt pained 145 fence posts. Altogether they painted three hundred and ..... fence posts.

15. Granny picked 348 lemons and Belinda picked 241 lemons. Together they picked five hundred and ..... lemons. *hyphen*

16. On Thursday 165 sheep will be shorn and on Friday 162 sheep will be shorn. Altogether three hundred and ..... sheep will be shorn on those days. *hyphen*



Down

2. Matt chopped 223 pieces of firewood and Grandpa chopped 316 pieces of firewood. Altogether they chopped five hundred and thirty ..... pieces of firewood.

3. 437 potatoes were collected by Granny in the morning and 213 potatoes were collected by Belinda in the afternoon. So Granny and Belinda collected six hundred and ..... potatoes in the day.

5. Last week Grandpa collected 329 eggs from the hens and Granny collected 487 eggs. So last week Grandpa and Granny collected eight hundred and ..... eggs altogether.

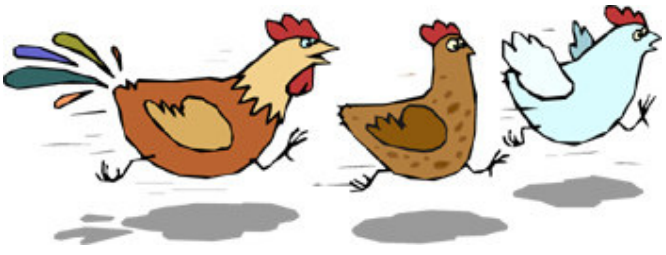
7. For Grandpa's birthday party last April lots of family and friends were invited. Granny baked 235 small cakes and 227 were eaten. How many cakes were left?

8. Matt went with Grandpa on a drive to the city. They drove 158 kilometres there but on the way back they took a short cut and it was only 140 kilometres. How many more kilometres did they drive on the way to the city than on the way back?

10. Granny sewed 626 stitches in making a dress for Belinda. She had to undo 107 of them. This left five hundred and ..... stitches.

13. Grandpa and Granny have a dog named Buddy. Buddy rounded up 134 sheep. Then he rounded up another 174 sheep. Altogether Buddy rounded up three hundred and ..... sheep.

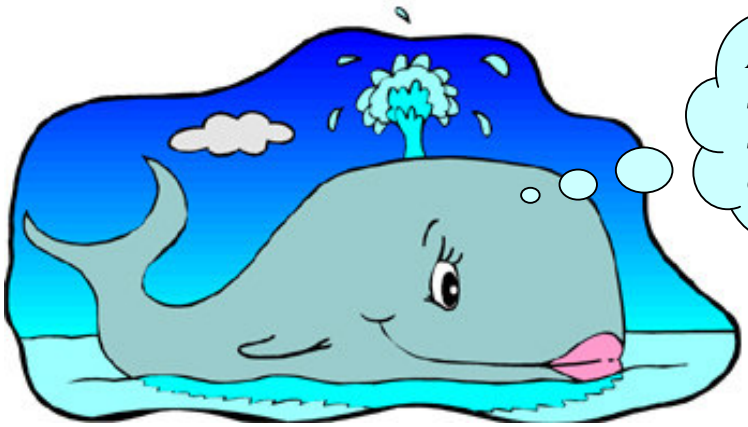
14. Grandpa said that last year it rained on 173 days and so far this year it has rained on 124 days. That's two hundred and ninety ..... rainy days since the start of last year.



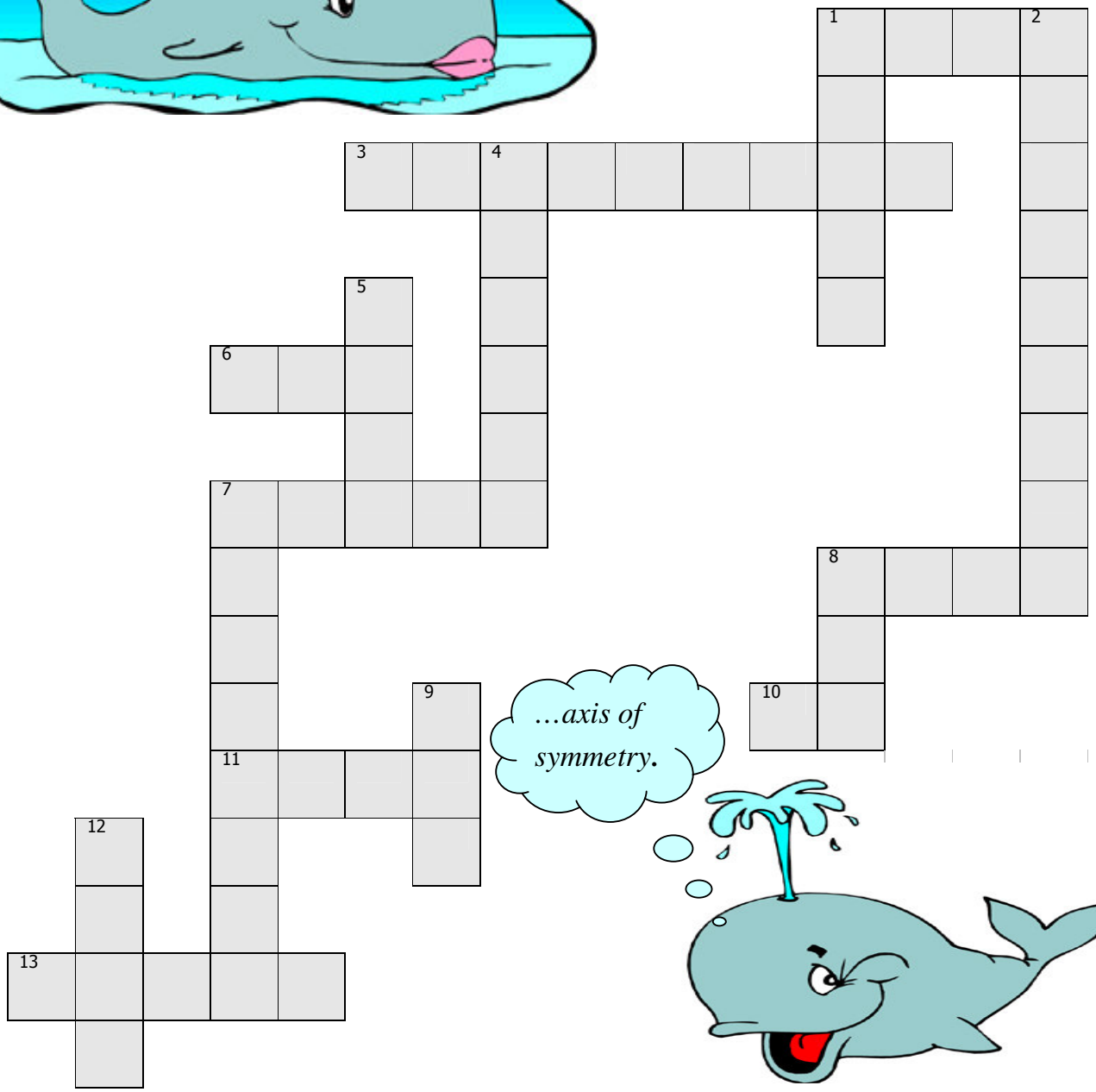
Lines of Symmetry

Degree of difficulty

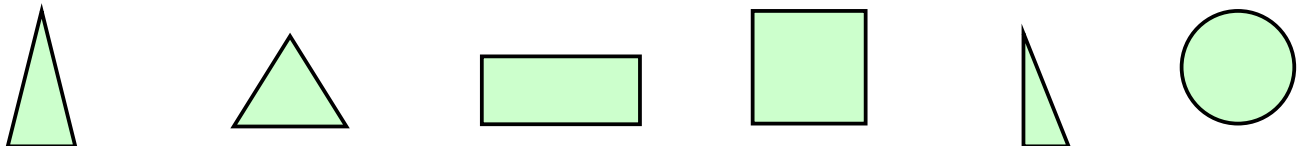
★★★



A line of symmetry is sometimes called an …..



…axis of symmetry.



a *two sides equal*

b *all sides equal*

c *rectangle*

d *square*

e *no sides equal*

f *circle*

Across

1. Laura found that shape *d* has more than two lines of symmetry. How many does it have?

3. What is the name of the shape that has two lines of symmetry?

6. How many lines of symmetry in the square are diagonals?

7. Shape *b* has ..... lines of symmetry.

8. A line of symmetry cuts a shape in half. True or false?

10. Are the diagonals in a rectangle lines of symmetry?

11. How many lines of symmetry does shape *e* have?

13. ..... of symmetry can be used to fold two halves of a paper square exactly over themselves, with no overlap.

Down

1. All triangles have three lines of symmetry. True or false?

2. A ..... always has two lines of symmetry.

4. What is the name of the shape (above) that has more than four lines of symmetry?

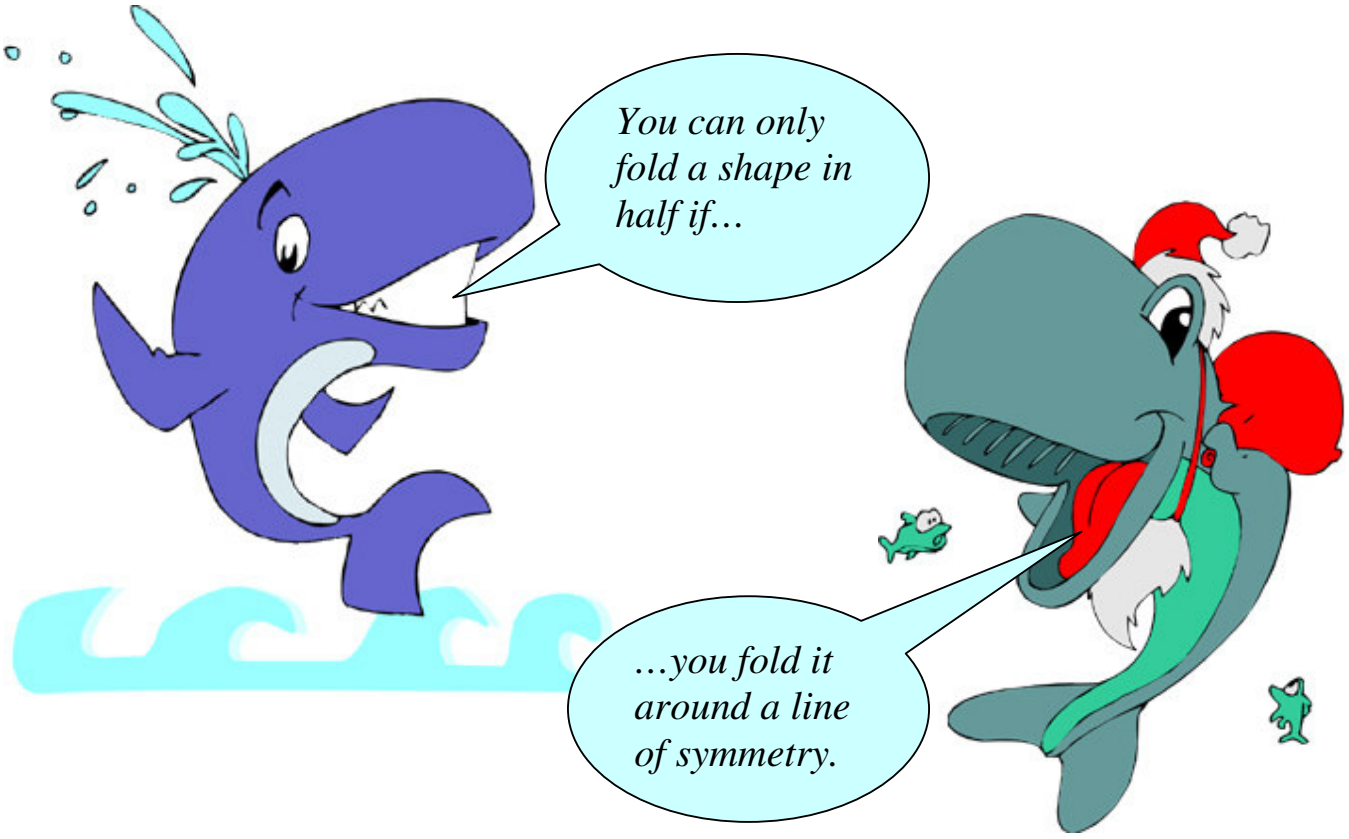
5. Two rectangles have ..... lines of symmetry altogether.

7. A ..... has either three, one or no lines of symmetry.

8. Triangle *a* has ..... lines of symmetry less than triangle *b*.

9. Do large rectangles have the same number of lines of symmetry as small rectangles?

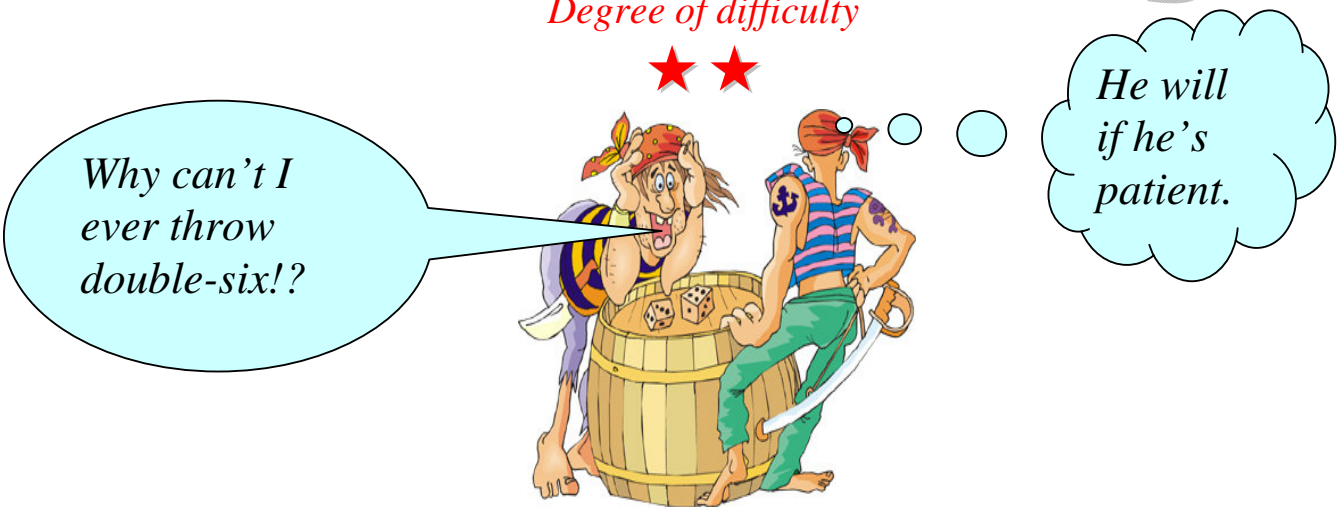
12. A line of symmetry is also called an ..... of symmetry.

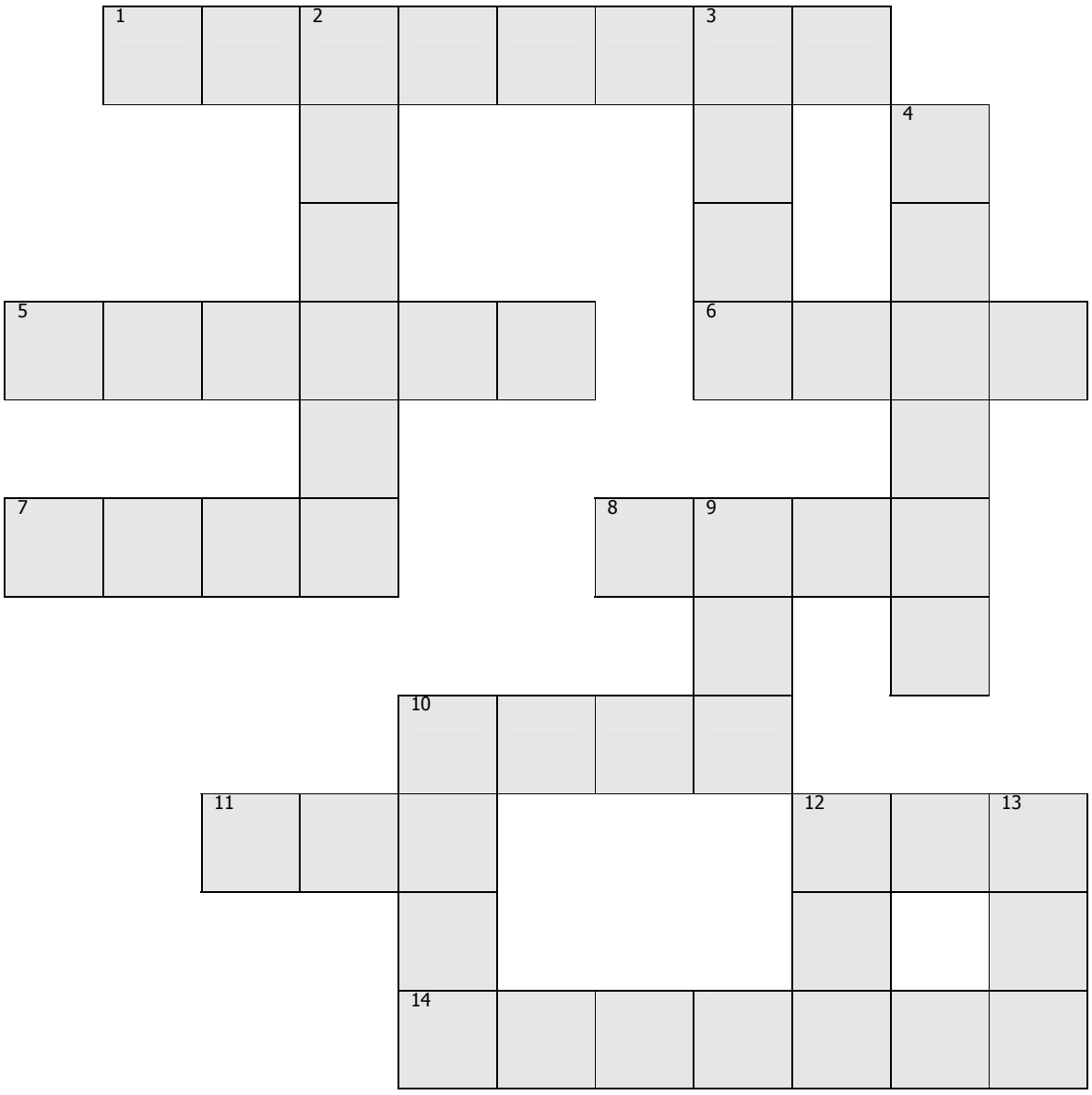


Probability

Degree of difficulty

★★





Across

1. James is going to flip a coin ten times. Do you think it likely or unlikely that he will get 10 heads?

5. If Alicia tosses a die and hopes for a six and Jeremy flips a coin and hopes for a tail, who has the most chance of getting what they hope for?

6. If Mack tosses a die and hopes for a six and Mike tosses a die and hopes for an even number, who has the most chance of getting what they hope for?

7. If Mary flips two coins and hopes for one head and one tail, and Mira flips two coins and hopes for two tails who has the most chance of getting what they hope for?

8. Joel and Lisa each throw a die. Joel hopes for an odd number and Lisa hopes for a 4. Who has the best chance of getting what they hope for?

10. If you toss a die 10 times you can expect to get an even number about ..... times.

11. If you flip a coin 4 times you can expect to get a head about ..... times.

12. If you toss a die 4 times you can expect to get an odd number about ..... times.

14. Roxanne is going to flip a coin 6 times and hopes to get three heads. Jacinta is going to flip a coin 6 times and hopes to get 4 tails.
Which girl has the best chance of getting what they hope for?

Down

2. Is it likely or unlikely that you will get a 6 at least once if you throw a die seven times?

3. Liam and Tom both flip a coin 3 times. Liam hopes for at least two heads and Tom hopes for at least one tail. Which boy has the smallest chance of getting what he hopes for?

4. If Becky throws a die 10 times is it likely or unlikely that she will get a 2 at least once?

9. If Carolyn flips a coin twice how many tails will she most likely get?

10. If Jeff flips a coin eight times how many heads will he most likely get?

12. Billy flipped a coin 20 times and he counted all the heads that came up. He probably got about ..... heads.

13. If Jake tossed a die twice how many odd numbers probably came up?

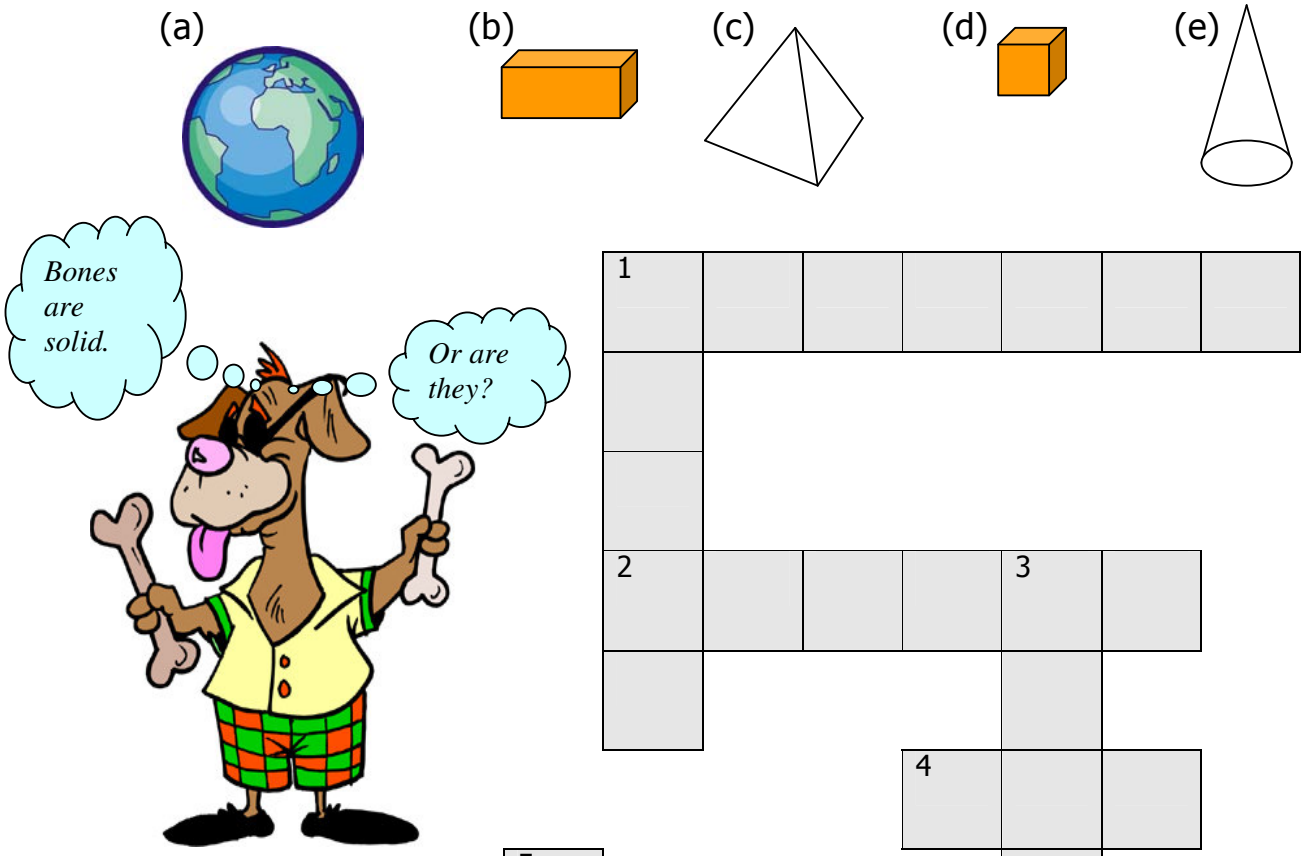
3-D Objects

Degree of difficulty

★★

** You need to look at these shapes to help you with some of the questions.*

(a) (b) (c) (d) (e)



Across

1. Ann-Marie picked up shape (c). Shape (c) is a ..... .

2. Karen says that (a) and a tennis ball are the same shape. Each is a ..... .

4. Bobby said, "Three things in space that have the shape of a sphere are planet Earth, the moon and the .....".

6. Mark knows that a pyramid can stand upright because its bottom is ..... .

7. Some prisms have six faces. Anita, who is clever, said, "Faces are sometimes called surfaces or .....".

8. Benny was looking at shape (e); this is a ..... .

9. Julie said, "Each side of (d) has four ....., which you can trace your fingers around."

10. Robbie knows that a cube has six faces which are all the ..... shape and size.

11. David said, "Did you know that every pyramid goes up to a ..... ?"

12. Allison saw that shape (b) has height, width and .....

Down

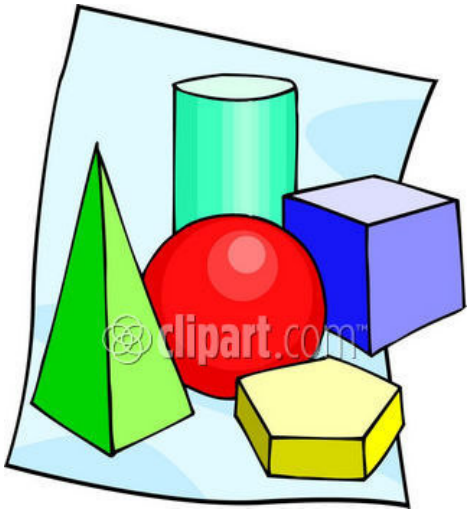
1. "I know what shape (b) is," said Allison, "it is a .....".

3. "All spheres are ....., like a ball," said Karen .

5. "Another word for sides is ....." said Anita.

7. Raymond said, "Some cones and pyramids have a gentle slope and others have a ..... slope."

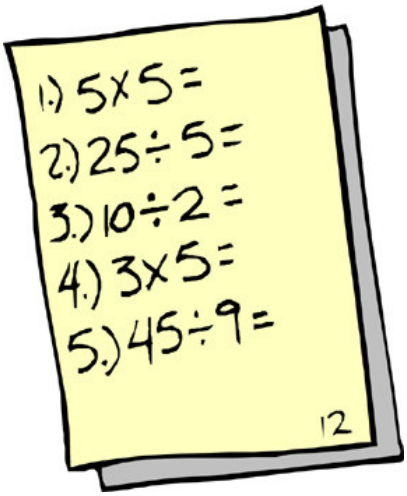
8. "Shape (d) is a ....." said Jonathon.

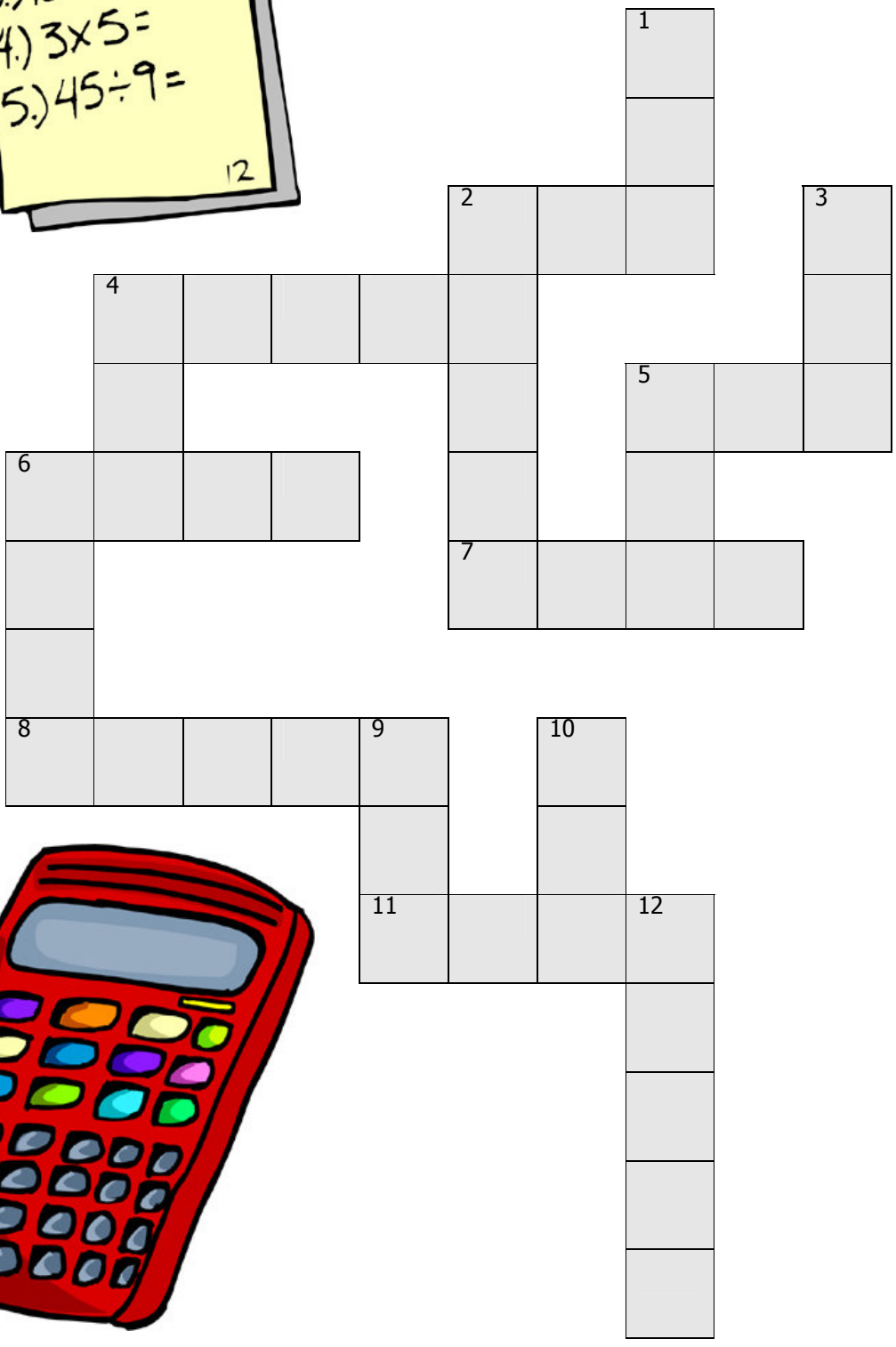


Sharing and Division

Degree of difficulty

★★





Across

2. Jenny shared her 12 swap cards with her friend Jasmine. How many swap cards did each girl get?

4. Share 9 lollies among 3 friends. How many each?

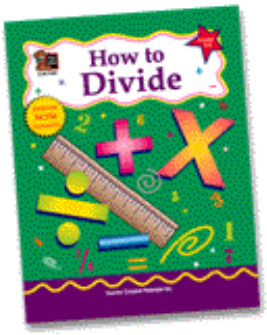
5. Five children were at Mary's birthday party. Mother cut the cake into 10 pieces. How many pieces did each girl get?

6. If 12 paint brushes are shared by 3 painters, how many brushes do they each get?

7. 18 raffle tickets were sold by 2 children. The children sold the same number of tickets as each other. How many tickets did they each sell?

8. Bobby and Tom shared $16 as a reward for finding Mr Smith's lost dog. How many dollars did each boy receive?

11. Three children from Miss Taylor's class had to collect 27 tennis balls from the sports shed. If the children carried the same number of balls as each other how many balls did each child carry?



Down

1. Four boys collected 24 soft drink cans altogether. How many did they each collect if they collected the same number of cans as each other?

2. Two boys collected 14 tadpoles from a swamp. How many tadpoles did each boy collect if they collected the same number as each other?

3. If 7 girls read 14 books altogether how many books did they each read if they read the same number of books as each other?

4. 20 sheep were shorn by some farmers and each farmer sheared 10 sheep. How many farmers sheared the sheep?

5. Joanne counted 20 birds' legs. How many birds were there?

6. Johnny counted 20 cats' legs. How many cats were there?

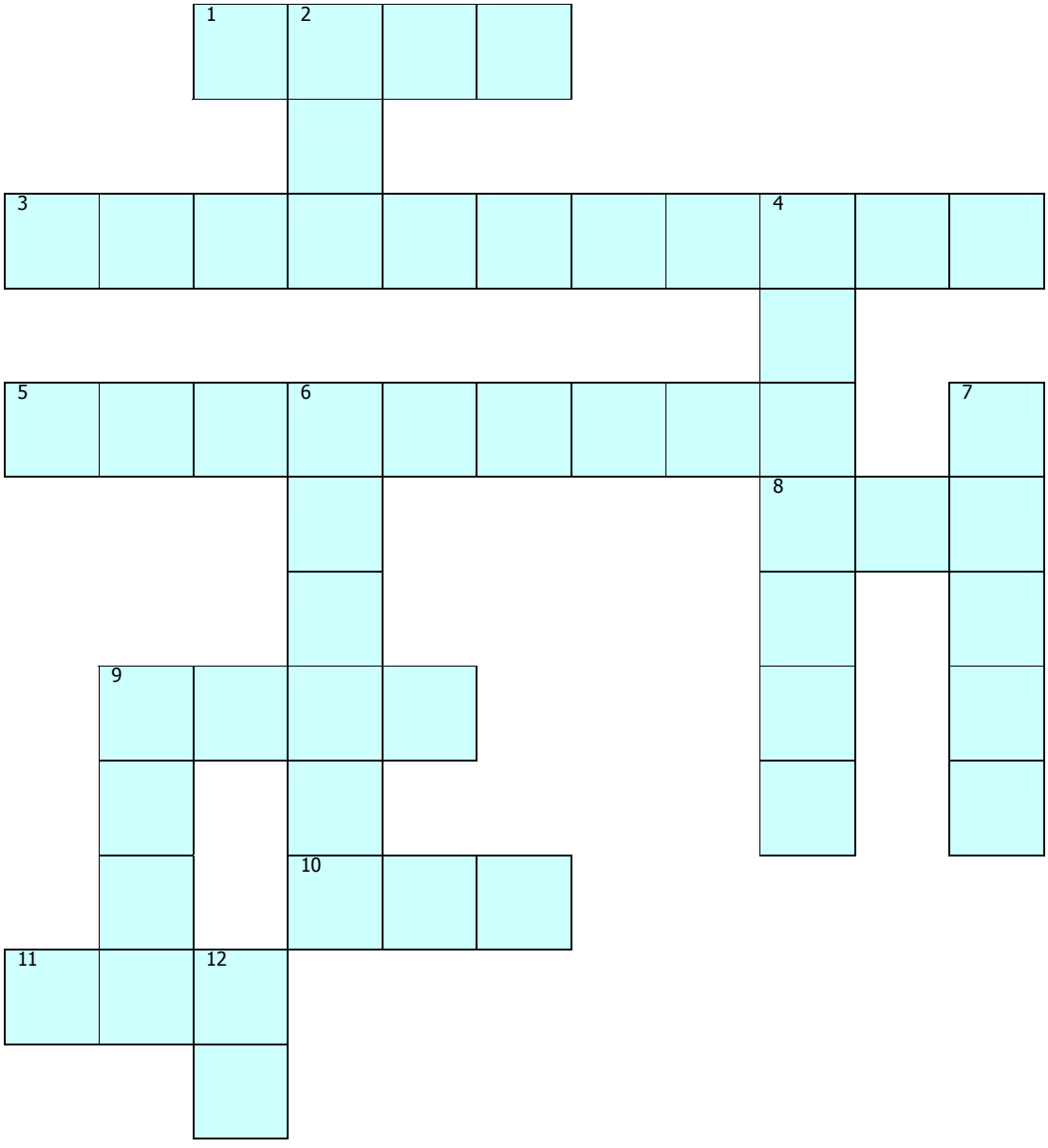
9. $30 was shared equally by three people. How many dollars did each person get?

10. Five girls scored a total of 50 points in a game and each girl scored the same number of points as each other. How many points did each girl score?

12. Three octopuses had 24 tentacles altogether. How many tentacles did each octopus have?

2-Digit Numbers

Degree of difficulty



Across

1. In my class there are 17 boys and 13 girls. How many more boys than girls are there?

3. There are 40 boys in Year 2 and 36 girls in Year 2. How many children are there in Year 2? *hyphen*

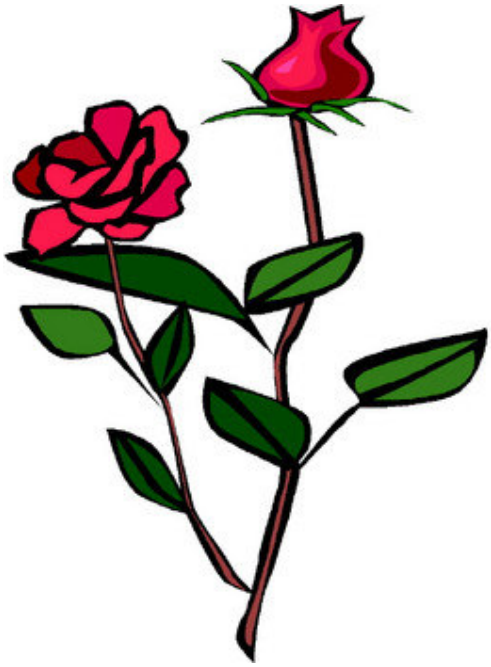
5. Twenty-two Year 2 children have one pet and twenty-four Year 2 children have two pets. How many children in Year 2 have one or two pets? *hyphen*

8. 26 children catch the bus to school but only 24 of these catch the bus home. How many children only catch the bus one way?

9. In Year 3 there are 39 girls but only 30 boys. How many more girls than boys are there?

10. In Year 4 there are 30 girls and 39 boys. Are there the same number of children in Year 4 as there are in Year 3? (see question 9 Across)

11. Our school has a rose garden and there are 42 rose bushes. 32 of the rose bushes have flowers. How many do not have flowers?



Down

2. Our school library has 16 windows on the side facing the street and 15 on the other side. How many more windows are facing the street?

4. The school playground has places for 38 bicycles near the willow tree. Near the gum tree there are places for 22 bicycles. How many more bicycle places are near the willow tree than the gum tree?

6. Our school canteen sold 53 buns on Wednesday but only 33 on Thursday. How many more buns were sold on Wednesday than on Thursday?

7. The school has 75 small stakes around the garden. 35 are painted white. How many are not painted white?

9. There are 39 pictures in our school hall and 30 of these are in frames. How many are not in frames?

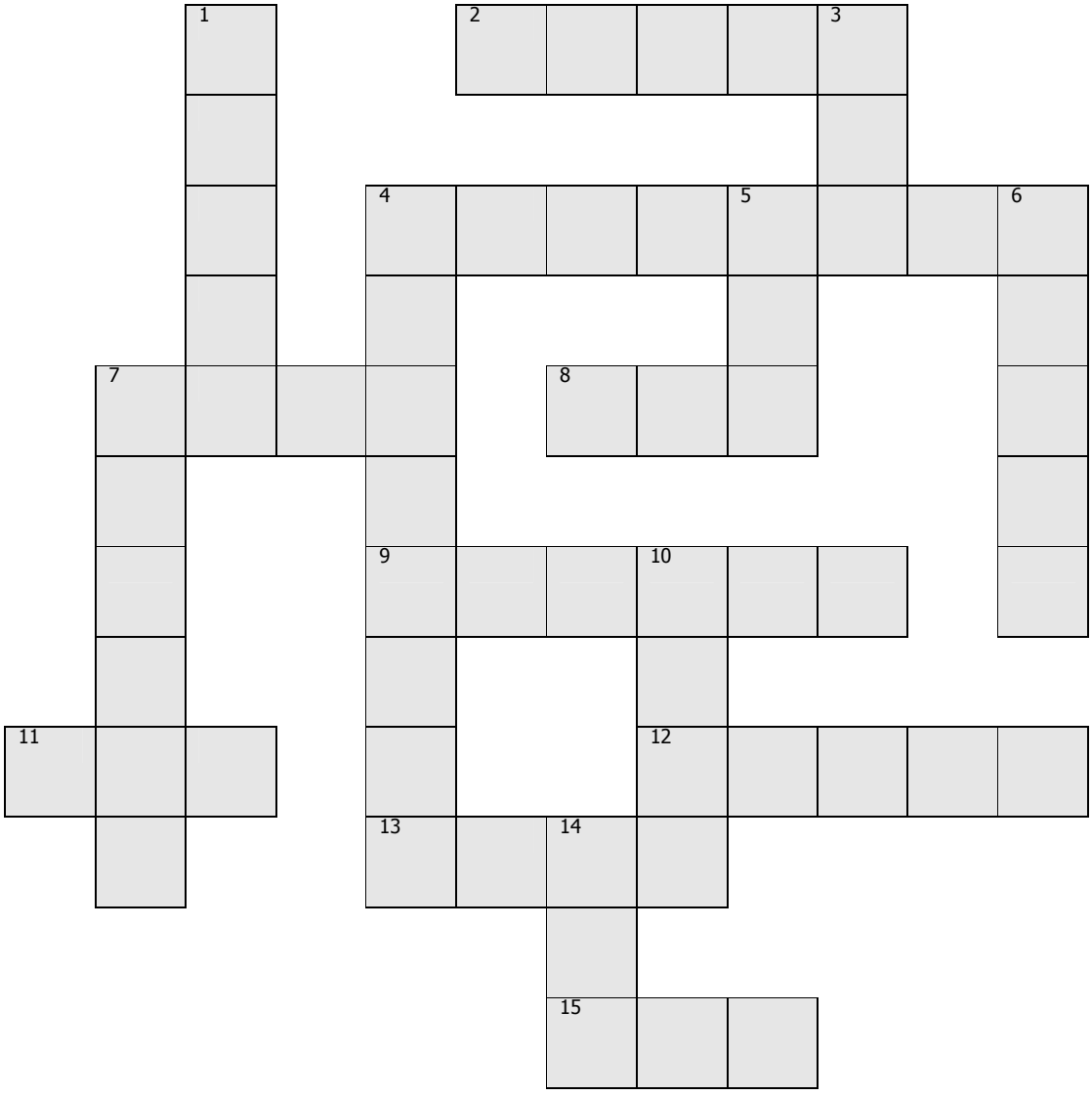
12. 35 children rode their bike to school on Tuesday. 14 less than this rode their bike on Wednesday. Did 22 children ride their bike on Wednesday?

Fractions

Degree of difficulty

★★

You don't have to be a genie-us to work these fractions problems out.



Across

2. There were four clowns doing tricks. Cindy laughed at three of the clowns. Jonno laughed at two of them. Which child laughed at half of the clowns?

4. The circus magician sawed a lady into four equal parts. Did the magician saw the lady into halves or quarters?

7. While they watched the horses parading Kate and Anna ate some candy pieces. Kate ate 3 of her four pieces; Anna ate 2 of her 4 pieces. Which girl ate half of her candy pieces?

8. There were four trapeze artists. Half of them were ladies so how many were not ladies?

9. One of the clowns tied a long balloon into 3 equal parts. Did he tie the balloon into halves, thirds or quarters?

11. Deb and Ben watched a brave man performing with a tiger and 3 lions. Deb was looking at the lions and Ben was looking at the tiger. Which child was looking at a quarter of the animals?

12. Three quarters of the four performing seals were males. How many seals were males?

13. Seth and Lisa saw the elephants on parade. Seth saw an elephant lift one of his legs and Lisa saw a different elephant stand on two legs. Was it Seth or Lisa who saw an elephant lift up a quarter of its legs?

15. How many of the three clowns burst a balloon if one third of them burst a balloon?

Down

1. Mandy ate half of her 8 jellybeans and Aiden ate a quarter of his 8 jellybeans. Which child ate 2 jellybeans?

3. One quarter of the 4 monkeys smoked a cigar. How many monkeys smoked a cigar?

4. The strong man broke a telephone book into four equal parts. Did he break it into halves, thirds or quarters?

5. Shannon was at the circus for four hours and Katie was there for half that time. For how many hours was Katie at the circus?

6. Craig and Suzie had $3 each to spend at the circus. Craig spent $2 and Suzie spent $1. Which child spent one third of their money?

7. Andrew and Robert saw 4 tigers in a cage. Andrew heard 2 of them roar but Robert only heard one of them roar. Which boy heard half of the four tigers roar?

10. Toni and Ruth looked at their seat numbers. Toni's seat number was 5 and Ruth's was 6. Which girl had a seat number that was half of 12?

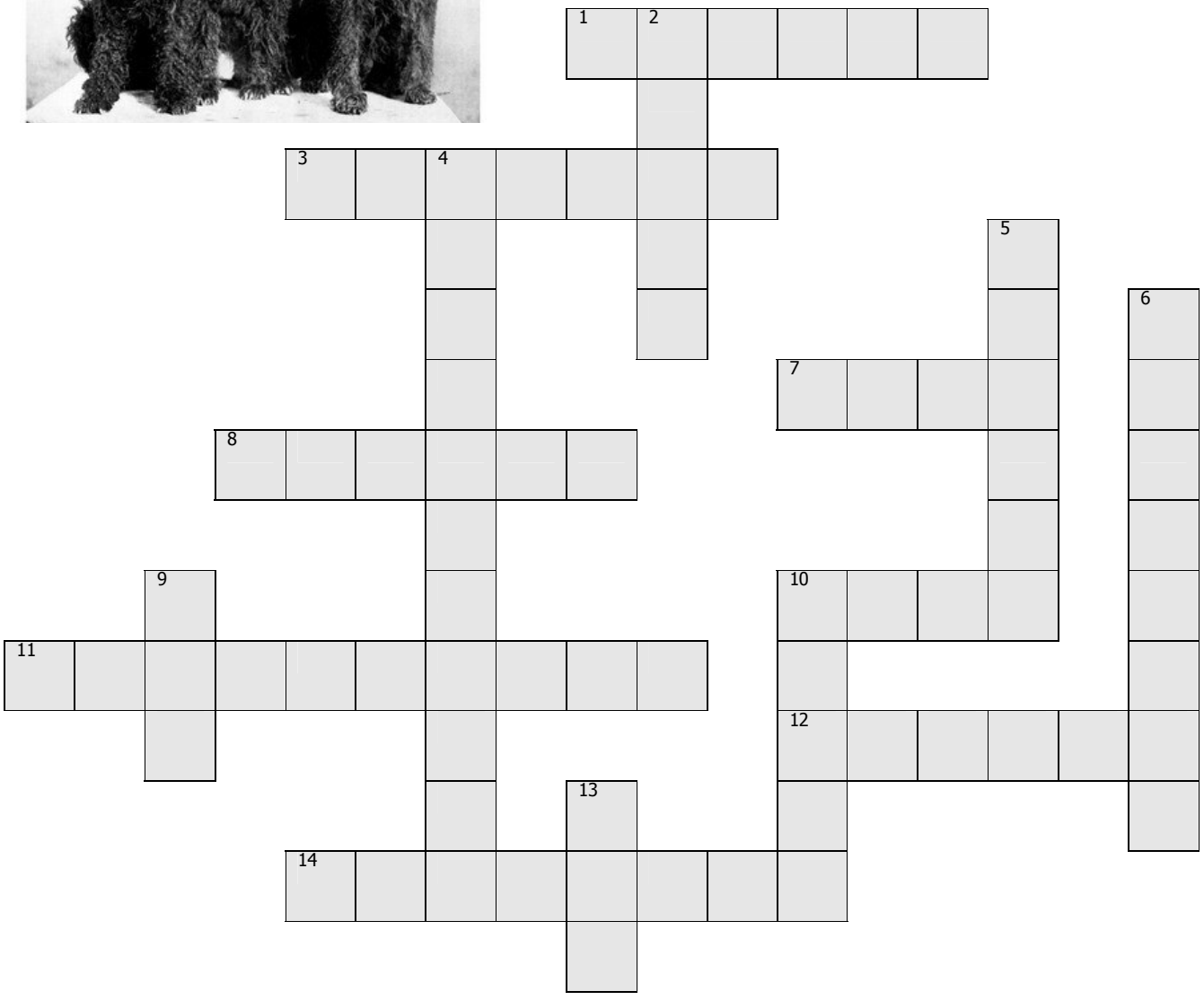
14. Jack was sitting 4 rows from the front. Josie was sitting only half that far back. How many rows from the front was Josie?

More 3-D Objects

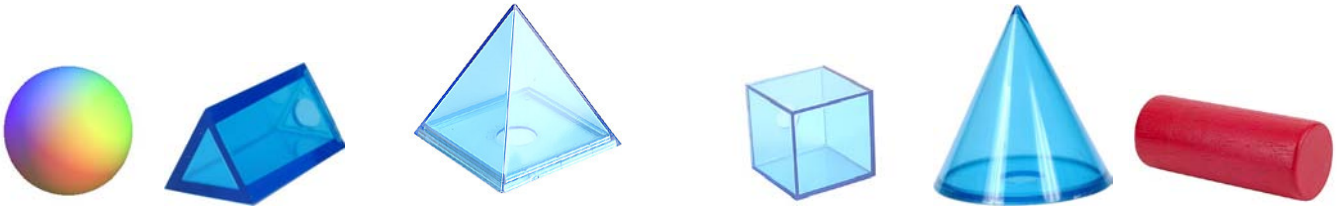
Dog Dog Dog

Degree of difficulty

★★



(a) (b) (c) (d) (e) (f)



Across

1. Julie and Bonnie were playing tennis. The tennis ball was the shape of a ..... .

3. Max and Joe were using (c)-shapes in a game they invented. Each shape is a ..... .

7. In a dress-up game Jesse dressed up like a wizard. His hat had an (e)-shape. This shape is a .....

8. Joey and Billy were making towers using (d)-shaped blocks. Each surface of one of these blocks has the shape of a ..... .

10. If Joey painted one surface of a (d)-block red and Billy painted all the other surfaces of that block yellow how many surfaces did Billy paint?

11. If the base of a pyramid has the shape of a triangle it is a ..... pyramid.

12. The base of a cone has the shape of a ..... .

14. Barnaby noticed that the (b) and (d)-shapes each have eight corners. These corners are called ..... .

Down

2. Barnaby wasn't sure what the (b)-shape is called. Can you help him? It is a ..... .

4. A prism which has a base in the shape of a rectangle is a ..... prism.

5. Barnaby counted all the edges on shape (d). How many edges did he count?

6. Jessica and Ellie were using the (f)-shape as a drum.
This shape is a ..... ?

9. Barnaby counted the surfaces on a (d)-shape. How many did he count?

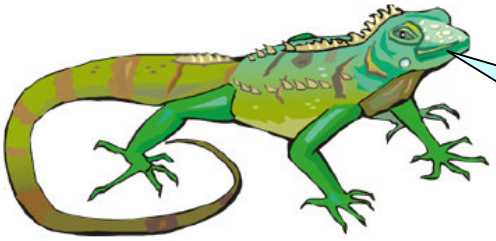
10. Another name for surfaces is .....

13. A triangular pyramid has a base in the shape of a triangle. This pyramid has how many edges?

More Adding and Subtracting 3 Digit Numbers

Degree of difficulty

★★



Always add from right to left.

Across

1. Helen has 209 stamps from Germany. Her friend Carolyn has 308 German stamps. Altogether the girls have five hundred and ..... stamps from Germany.

3. Ben's 146 French stamps plus Gavin's 242 French stamps equals three hundred and ..... eight French stamps.

4. Coralie has 592 stamps from Australia. If she gives 350 of these to her friend Sheree, Coralie now has two hundred and ..... two Australian stamps.

6. Lucy has collected 380 USA stamps less than Yvonne's 790 USA stamps. So Lucy has four hundred and ..... USA stamps.

8. Joshua's 601 Jamaican stamps added to Hamish's 203 Jamaican stamps equals eight hundred and ..... Jamaican stamps altogether.

11. Alice has 240 Canadian stamps and her sister Jenny has 130 Canadian stamps. This means that Alice and Jenny have three hundred and ..... Canadian stamps altogether.

13. 333 of Ashley's Swiss stamps plus 223 of May's Swiss stamps equals five hundred and fifty ..... Swiss stamps altogether.

14. The Jones brothers had 428 stamps of the world. They swapped 319 of these stamps in return for coins. Now they have one hundred and ..... stamps of the world left.

16. Billy gave 482 of his 793 stamps away to his cousin John. Billy had three hundred and ..... stamps left.

Down

2. Lauren has 602 stamps and Sue has 594 stamps. So Lauren has ..... more stamps than Sue.

4. Anna has 523 Chinese stamps and Vanessa has 573 Chinese stamps. This means that Vanessa has ..... more Chinese stamps than Anna.

5. Debbie collected 387 stamps of Sweden. Her friend Carla collected 165 Swedish stamps. Debbie collected two hundred and twenty ..... more Swedish stamps than Carla.

7. Digby has 420 stamps and Jason has 500 stamps. Jason has ..... more stamps than Digby.

8. Alex's 412 Polish stamps together with Byron's 413 Polish stamps makes eight hundred and twenty ..... Polish stamps altogether.

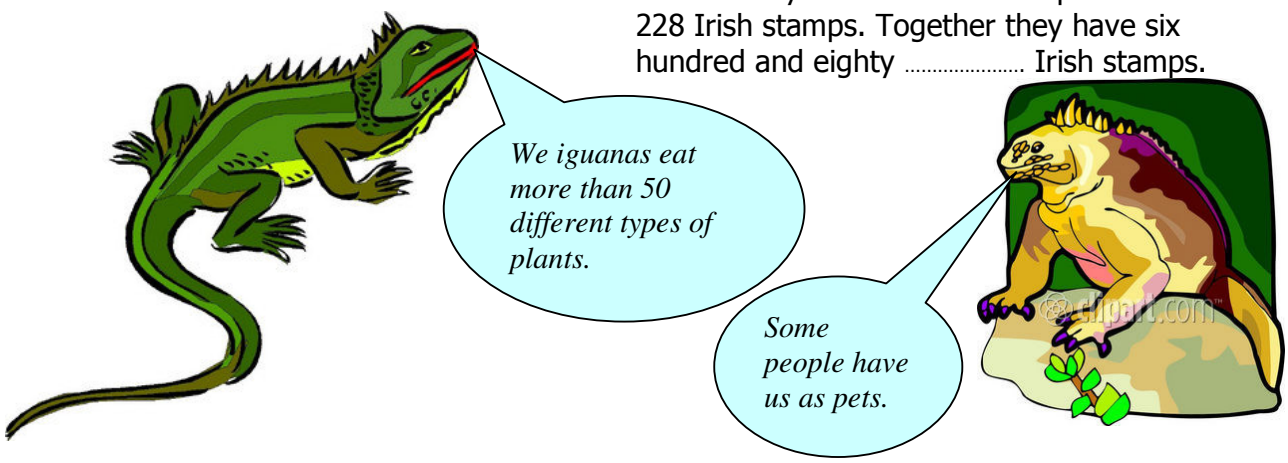
9. If 365 of Joanna's 698 Canadian stamps have a face value of less than 50c then the number of Joanna's Canadian stamps with a face value of 50c or more is three hundred and thirty ..... .

10. If Pete collects 332 triangular stamps and Alex collects 225 triangular stamps, the two boys together collect five hundred and fifty..... triangular stamps.

11. Shannon has 326 stamps less than Julia has. Julia has 587 stamps. So Shannon has two hundred and ..... one stamps.

12. Jack's 402 Japanese stamps and Michael's 208 Japanese stamps equals six hundred and ..... Japanese stamps altogether.

15. Tommy has 461 Irish stamps and Ben has 228 Irish stamps. Together they have six hundred and eighty ..... Irish stamps.

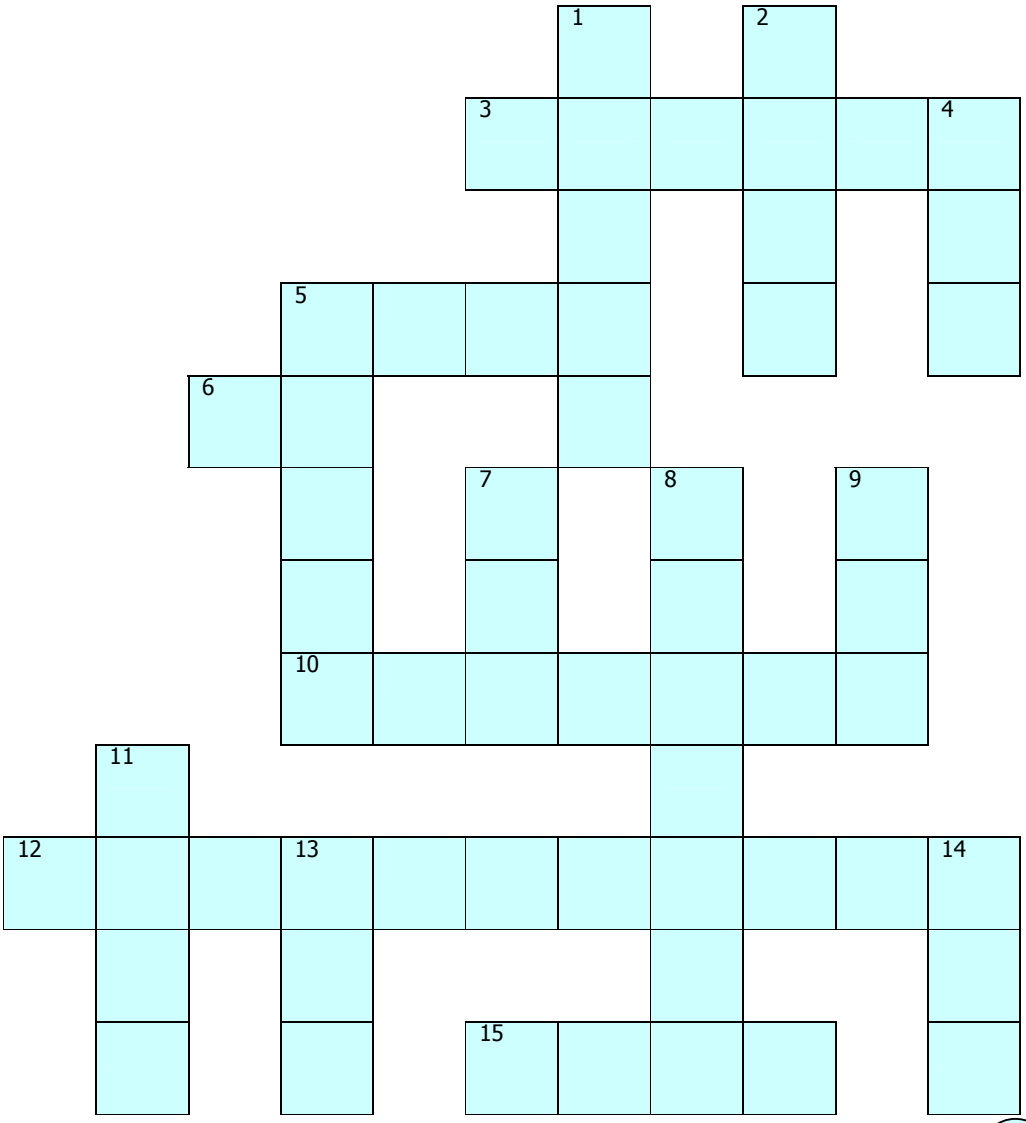


Smaller Time Units

Degree of difficulty

★

Now, let's see... if I catch one worm every 30 seconds I should be able to catch six worms in.....



Across

3. Pedro took a very small amount of time to take the fish off the hook. It took him only one second/ minute/ hour.

5. How long did it take Pedro to catch twenty fish? It took him about an …… .

6. Mickey, Pedro's small son, asked Pedro if there were more than 30 hours in one day.
"……..," said Pedro.

10. It takes Pedro about 50 seconds/minutes/ hours to reel in his line.

***12.** "Look at the fish I just caught," said Pedro, "it is about 40 centimetres/ metres/ kilometres long."

15. "Dad, is 50 seconds more or less than one minute?" asked Mickey.
"……..," replied Pedro.

** these are Measurement questions, not Time ones.*

Down

***1.** Pedro once caught a fish that weighed about 20kg and was about one centimetre/ metre/ kilometre long.

2. Pedro and Mickey took 5 minutes to take all their fish out of the bucket. Is this more or less than 20 seconds?

4. Pedro told Mickey that there are twenty-four hours in a …… .

5. After arriving at the beach, Pedro and Mickey fish for about four seconds/ minutes/ hours.

7. Pedro told Mickey that ……. is a short way of writing 'second'.

8. Mickey is not as fast as Pedro. It takes him about two seconds/ minutes/ hours to reel in his line.

9. "Are there 60 minutes in one hour?" asked Mickey.
"……..," replied Pedro.

11. "There are more/less than 100 seconds in a minute," said Pedro.

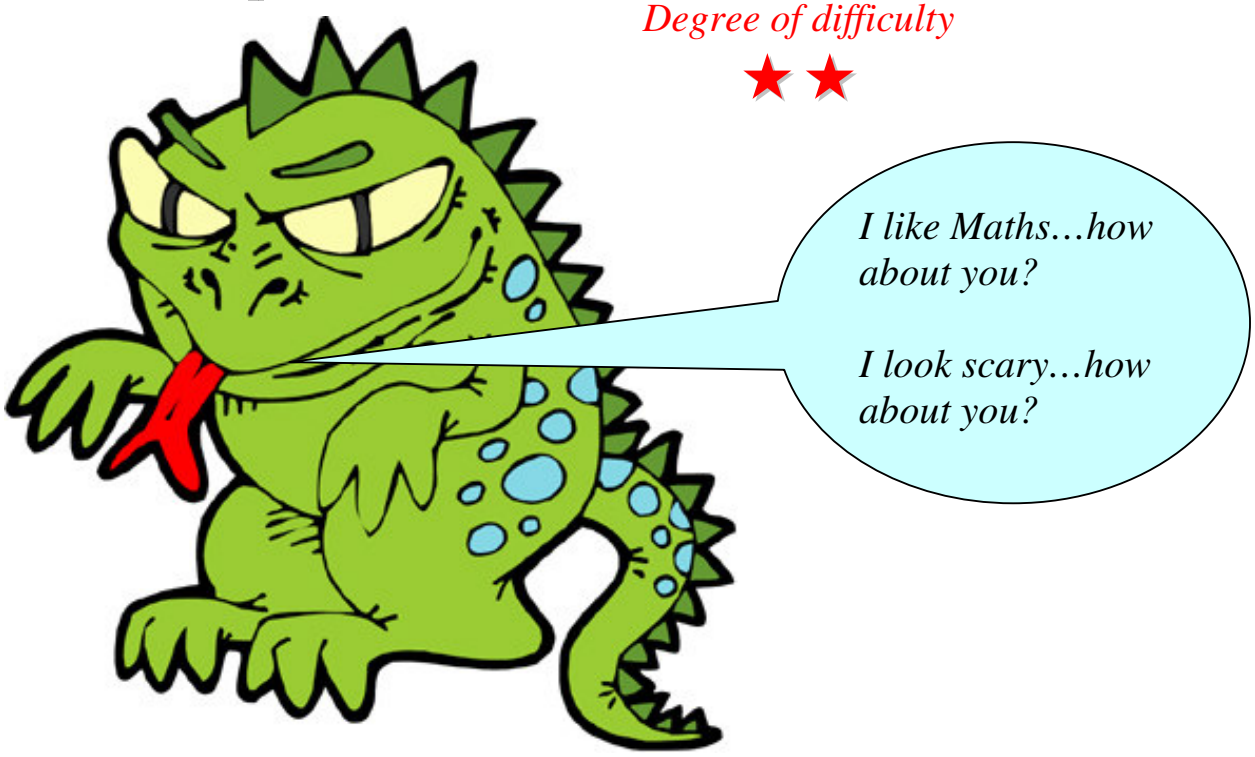
13. "It takes me about two/ fifteen/ twenty hours to clean all my fish," said Pedro.

***14.** Pedro told Mickey to throw the small fish back in the water. It was only about six/ twenty/ thirty centimetres long.

Multiplication and Division Facts

Degree of difficulty

★★



Across

3. Suzie read 10 pages of her book each night, Monday to Saturday. How many pages did she read altogether?

5. Hamish reads the same number of pages each night before bed. He read 14 pages in seven nights. How many pages did he read on each night?

7. Gail read three pages of her story on each of the 7 days in one week. Then she finished the story by reading the final page the next day. Altogether her story had ..... pages. *hyphen*

9. Bryan's book has 40 pages. If he reads 4 pages each night how many nights will he need to finish the book?

10. Glen is a fast reader. He read 7 pages of his storybook each day for three days. How many pages did he read altogether in the three days? *hyphen*

13. Did Evelyn, who read 5 pages each day for 4 days, read more pages than Sharon, who read 3 pages each day for 7 days?

14. Jackson read 4 pages each day for 4 days. Kaine read 3 pages each day for 5 days. How many more pages did Jackson read?

15. Carolyn read 6 pages of her book in bed on each of 6 nights. The next night she read the final 4 pages of the book. How many pages were in the book?

Down

1. Larry likes to read 3 pages a day. If he reads each day from Monday to Friday how many pages will he read?

2. A book contains 7 stories, each of 7 pages. There is also a Contents page. How many pages does the book have?

4. Sue-Anne read 7 pages a day for 4 days. Her friend Roxanne read 10 pages a day for 3 days. How many more pages did Roxanne read?

6. Larry likes to read 4 pages of his book in the library each lunch time. If he goes to the library each day, Monday to Friday, how many pages will he read?

8. Bonny's book had 27 pages. She read 3 pages a day. How many days did it take Bonny to finish her book?

9. Amanda reads 2 pages of her storybook each day. She finishes the book in 10 days. How many pages does the book have?

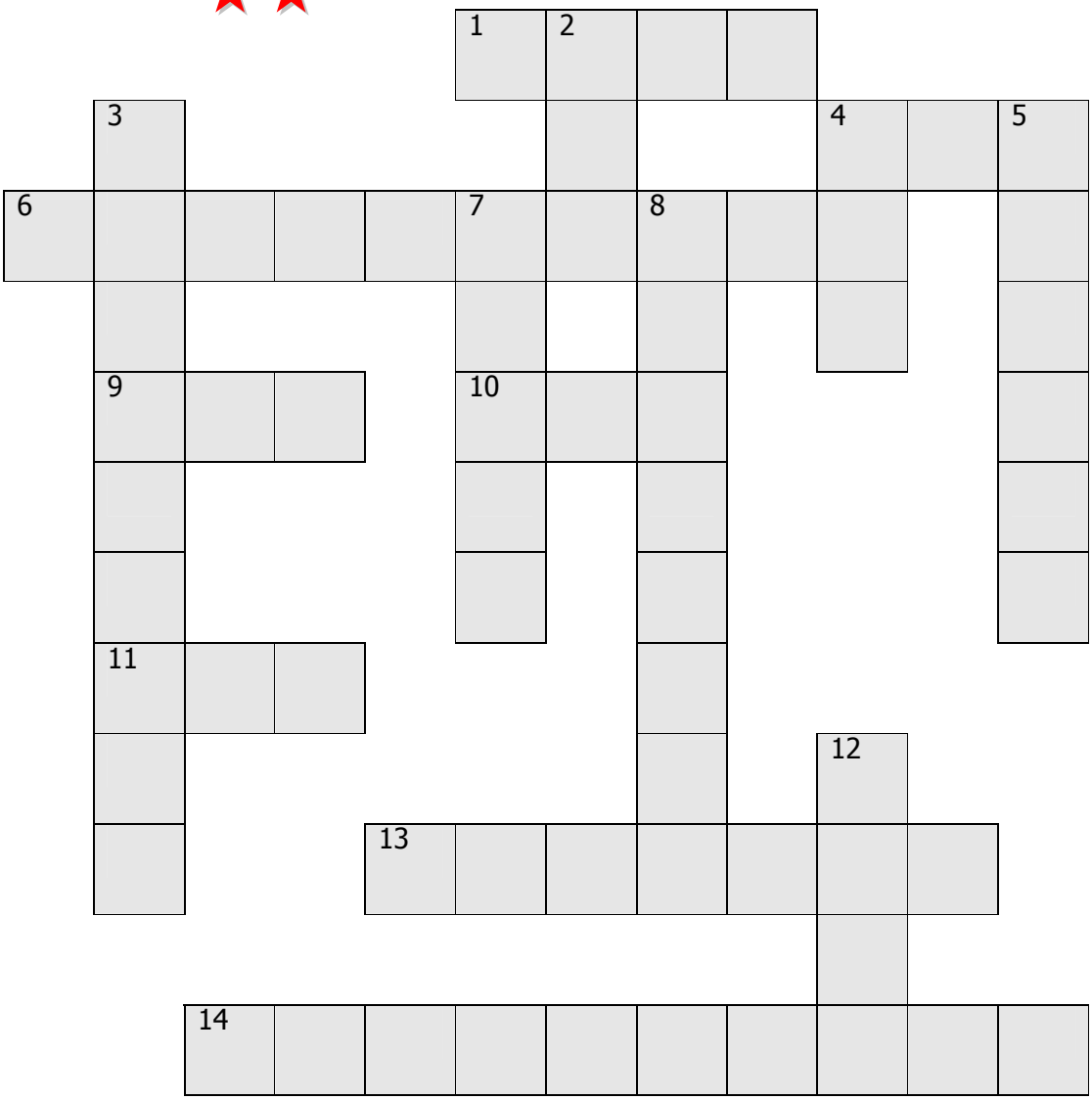
11. It took Julia 2 days to read her 18-page storybook. How many pages per day did she read if she read the same number of pages each day?

12. If Shannon reads five pages each day for 7 days does she read under or over 30 pages in the week?

Metric Conversions

Degree of difficulty

★★



Across

1. Toby knows that 40 mm is the same as ..... centimetres.

4. "There are ..... millimetres in a centimetre," said Annie.

6. Bobby's father told him, "A tiny flea may be only one ..... in length."

9. "A hundred centimetres equals ..... metre," said Joel.

10. "How many cm in 20 mm?" asked Dan.
Alice replied, "..... ."

11. Ava's mum said, "There are ..... kilometres in 2 000 metres."

13. "There are five ..... centimetres in five metres," said Amie.

14. Hayley found out that 10 mm equals one .....

Down

2. "Did you know," said Lonnie, "that there are ..... thousand metres in one kilometre?"

3. "Which is the longest: *metre, kilometre, millimetre, centimetre* ?" asked John.
Sharni said, "..... ."

4. Jane enquired, "How many millimetres in a centimetre?"
Ellie replied, "..... ."

5. Jack knows that in 9 cm there are ..... mm.

7. "A thousand millimetres equals one .....," said Margo.

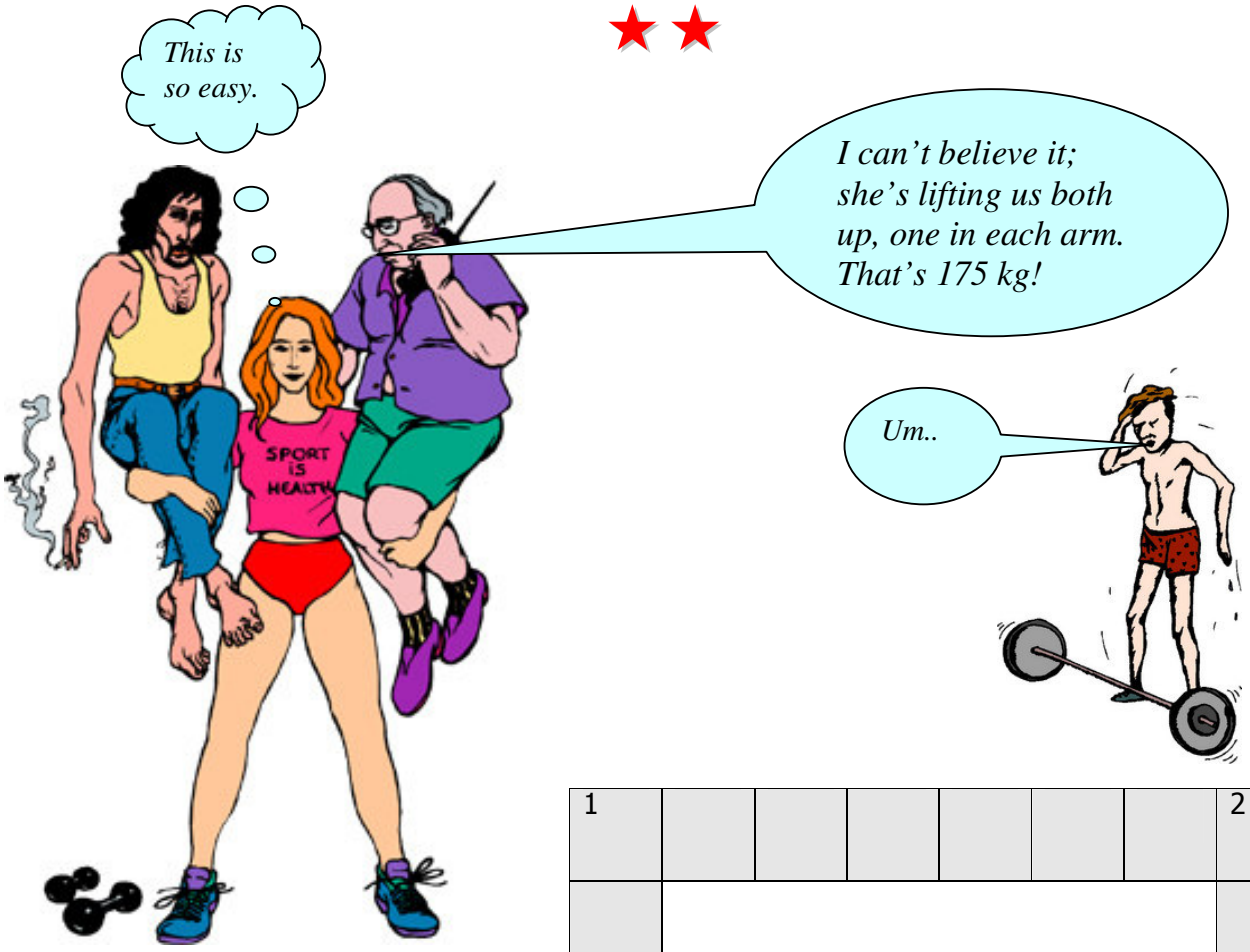
8. Sharon knows that there are one ..... centimetres in 10 metres.

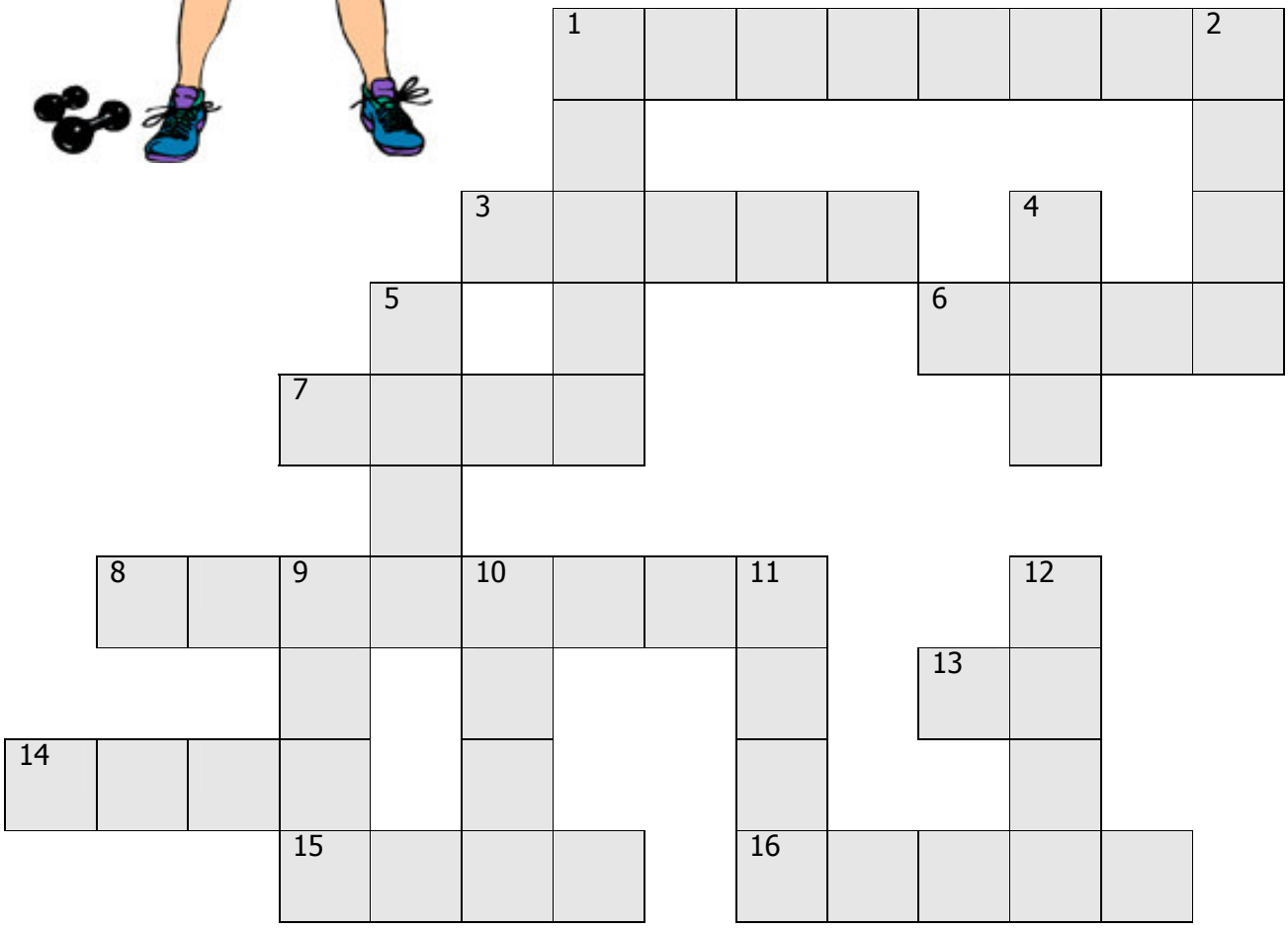
12. Jeremy said, "In the word 'centimetre' the syllable that means 'hundred' is ..... ."

Mass and Weight

Degree of difficulty

★★





Across

1. Bette was weighing some tomatoes. Her mother told her there are one ..... grams in one kilogram.

3. Dad said, "Which of these weighs less than a kilogram: a pumpkin, grape or watermelon?"
"A .....," replied Matt.

6. What about these?" asked Dad. "Which weigh less than a kilogram: possums, foxes or ants?"
"That's easy", said Matt, "....."

7. Josie wondered, "Would a one month old baby weigh five, fifteen or fifty kilograms?"
What would you tell her?

8. Teresa knows that two tins of jam, each weighing 500 grams, together weigh one ..... .

13. Bonnie asked, "Would a fully grown elephant weigh about 80 kg?"
What would you say?

14. "Cats, caterpillars, cockroaches. Which of these have masses of more than a kilogram?" wondered Emma.
"....." answered Jodi.

15. 2 000 gm; 2 kilograms.
"Same or different?" asked mum.
Sandy replied, "..... ."

16. Julie discovered that her large cat weighs about seven/ seventeen/ seventy kilograms.
Write the correct answer.

Down

1. Charlie found that a small bucket of water weighs about three/thirty/seventy kilograms.

2. Karen knows that large rabbits/dogs/men can weigh 50 kilograms.

4. Gerald said, "A pair of father's shoes weighs about one/five/ten kilogram(s)".

5. "Which part of the word 'kilogram' means 'thousand'?" asked Dad.
David replied, "..... ."

9. "Would a carton of milk weigh more or less than 5 kg?" asked Michael.
What would you say?

10. Garry said, "If one thousand identical fleas weigh one kilogram altogether then each flea weighs one ..... ."

11. "The word _ _ _ _ means nearly the same as 'weight'." said Ben.

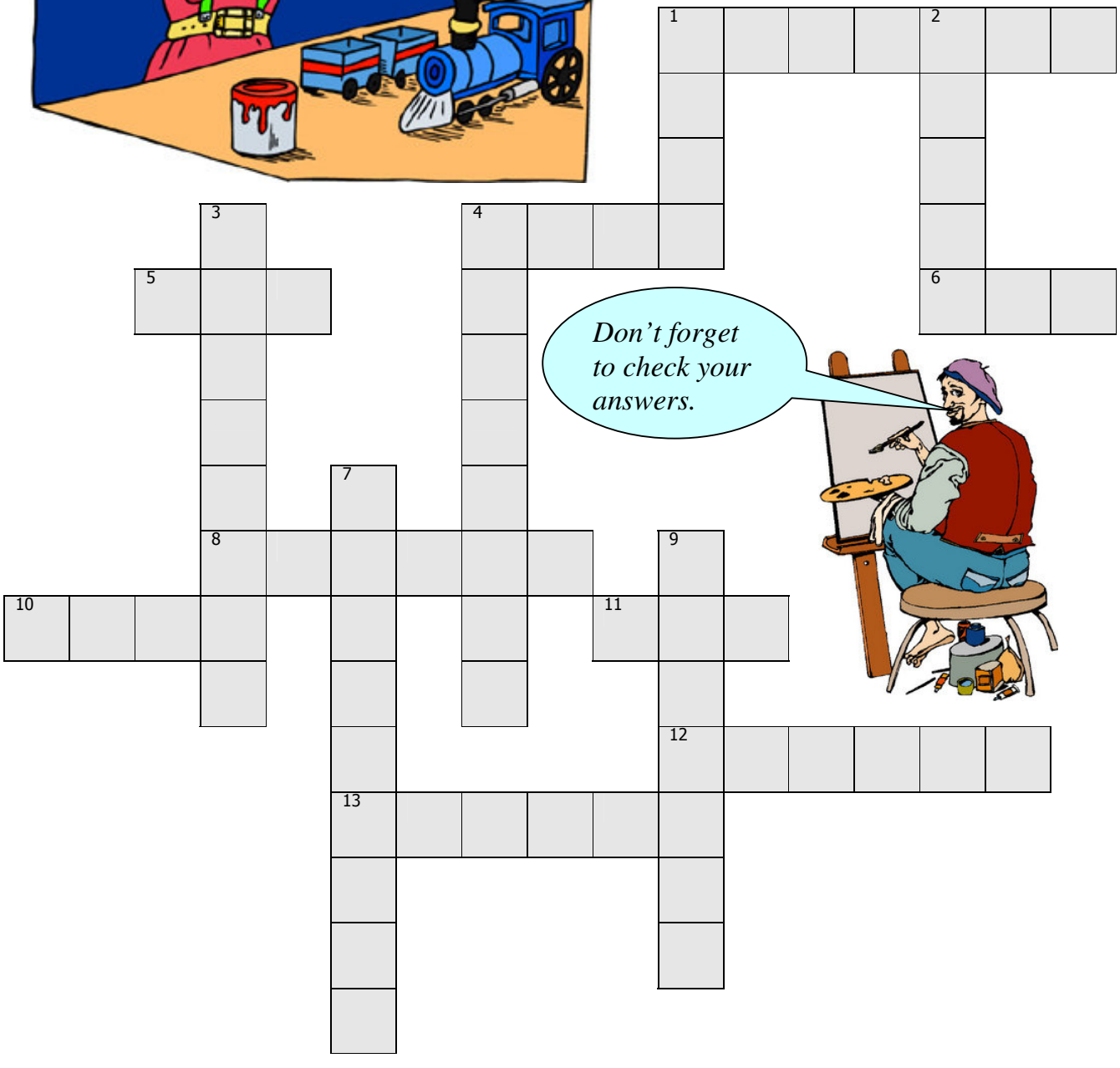
12. "Would a mouse weigh more or less than 2 grams?" wondered Melinda.
What would you say?

Multi-operational Problems

Degree of difficulty

★★★

*These questions will **really** make you think. You'd better take as much care as I am.*



Don't forget to check your answers.

Across

1. Danny, Brett and James each scored 5 points in the basketball game. The whole team scored 30 points, so how many points did the other players score?

4. Larissa and Alison were playing jump rope with three other girls. All the girls skipped for the same amount of time. Altogether the girls had 25 minutes of skipping. For how many minutes did each girl skip?

5. If 8 students in the class of 25 have black hair and 11 have brown hair, how many do not have black or brown hair?

6. In the first softball game 5 boys and 6 girls hit home runs. In the second softball game 5 boys and 4 girls hit home runs. What is half the total number of home runs scored in the two games?

8. In a friendly football match one team scored 12 goals and the other scored 10 goals. Half the number of goals scored in the match is …… goals.

10. Sally scored 11 and Eleanor scored 14 of their basketball team's 34 points. How many points were scored by other players?

11. Joanna hopped 14 times on her left leg and Bianca hopped 10 times on her left leg.
If we halve their total number of hops and then halve that number again we get ……. hops.

12. David's yo-yo cost $1.50 and Benjamin's cost $2.50. If we add those amounts together and multiply the answer by three we will get …….. dollars.

13. The big old tree in the playground has 9 large branches and 15 smaller branches. Half the number of branches on the tree is …… .

Down

1. Brad had 12 grapes in his lunch box and his brother Simon had 8 grapes in his lunch box. If each boy gave away a quarter of their grapes how many did they give away altogether?

2. Christine began to read her book instead of joining in a game. She read 4 pages, had a break, and then she read another 4 pages. How many pages did she have left to read if there were 16 pages in the book?

3. Robin took 14 seconds to run across the playground when it was full of children playing. He took only half that time when there were no other children in the playground. Three seconds less than the total time Robin took for the two runs is ……. seconds.

4. Sam threw his ball 15 metres. Melanie threw her ball 13 metres. Half the total distance thrown by Sam and Melanie is …… metres.

7. Kate had 8 swap cards, Sherri had 6 cards and Candice had half the number of cards that Sherri had. How many swap cards did the three girls have altogether?

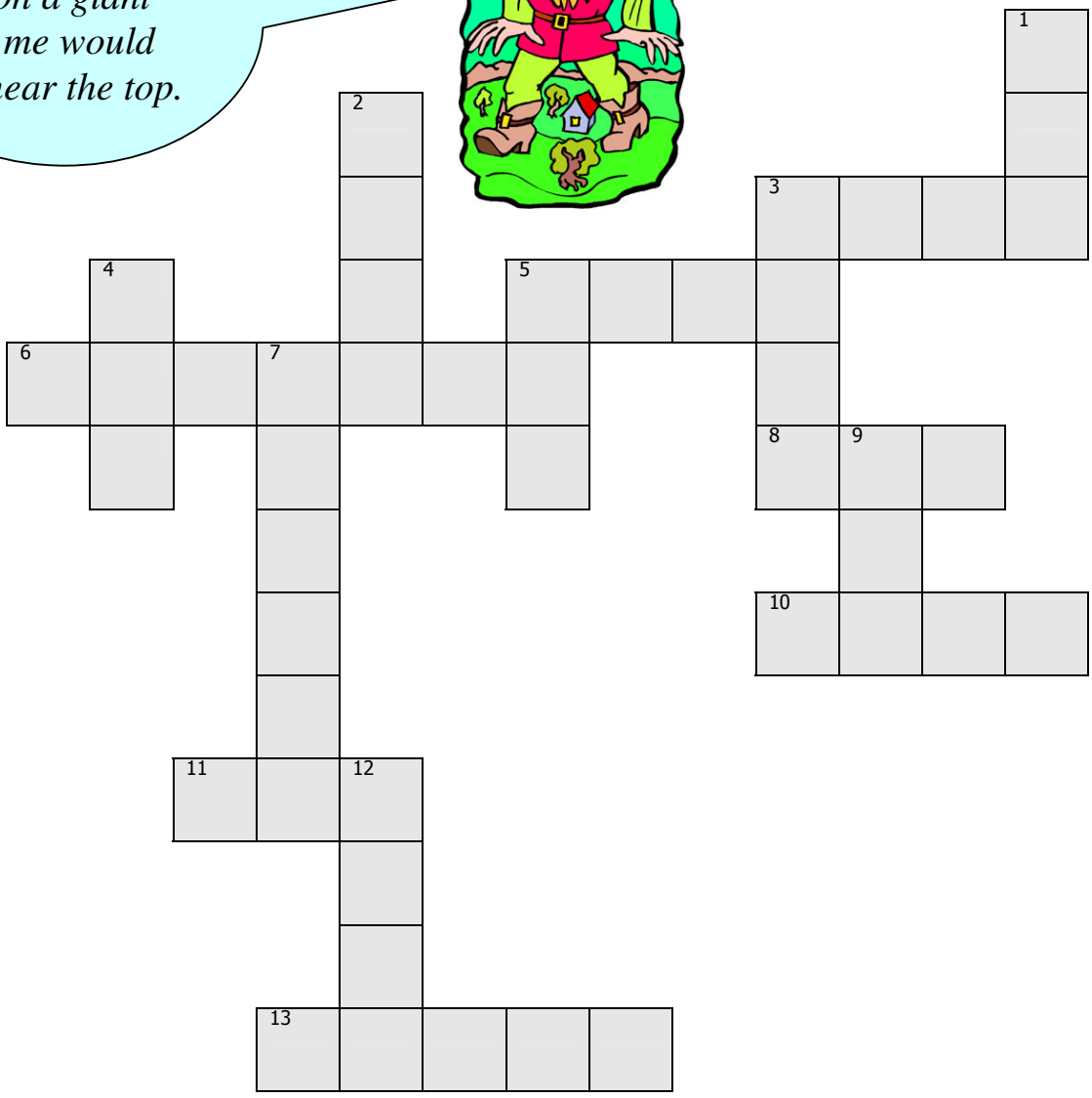
9. Joe scored three goals in football and Albert scored one. The whole team scored four times as many goals as Joe and Albert scored together. How many goals did the team score?

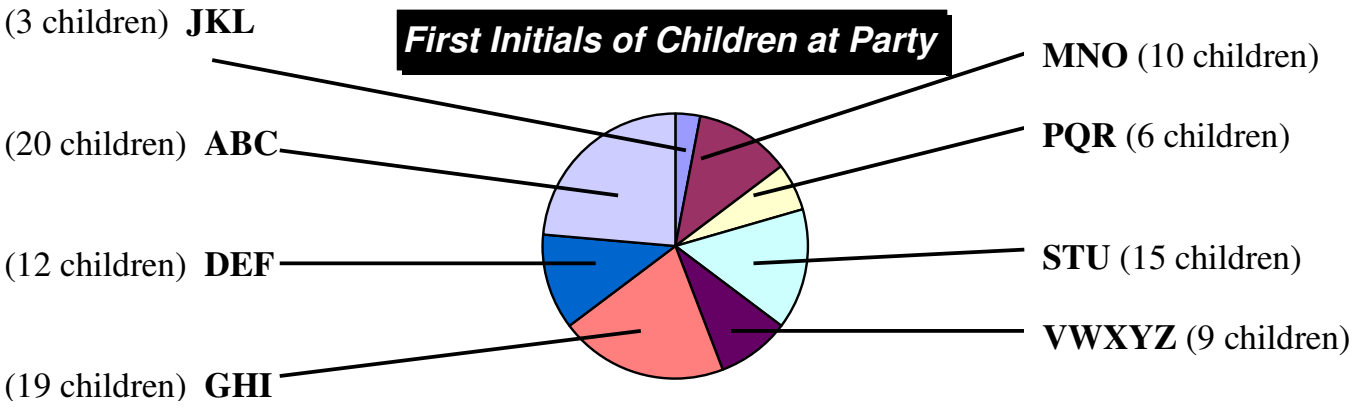
Graphs and Data

Degree of difficulty

★★

On a Height graph a giant like me would be near the top.





Across

3. Were there more or less children at the party with first initials P, Q and R than D, E and F?

5. Were there more or less children with initials A, B or C than G, H or I?

6. How many children at the party had initials S, T or U?

8. Which initials had 4 less children than G, H and I?

10. How many more children at the party had initials M, N or O than P, Q or R?

11. Which initials had two more children at the party than M, N and O?

13. There were ..... more children at the party with initials G, H and I than D, E and F.

Down

1. Were there less children with initials V, W, X, Y and Z than M, N and O?

2. Were there more or less children at the party with initials A, B or C than G, H or I?

3. There were ..... children with initials J, K or L than with any other initials.

4. There were ..... more children with initials V, W, X, Y and Z than with initials J, K and L.

5. Which initials had 5 less than S, T and U?

7. The total number of children with initials V, W, X, Y and Z and J, K and L is ..... .

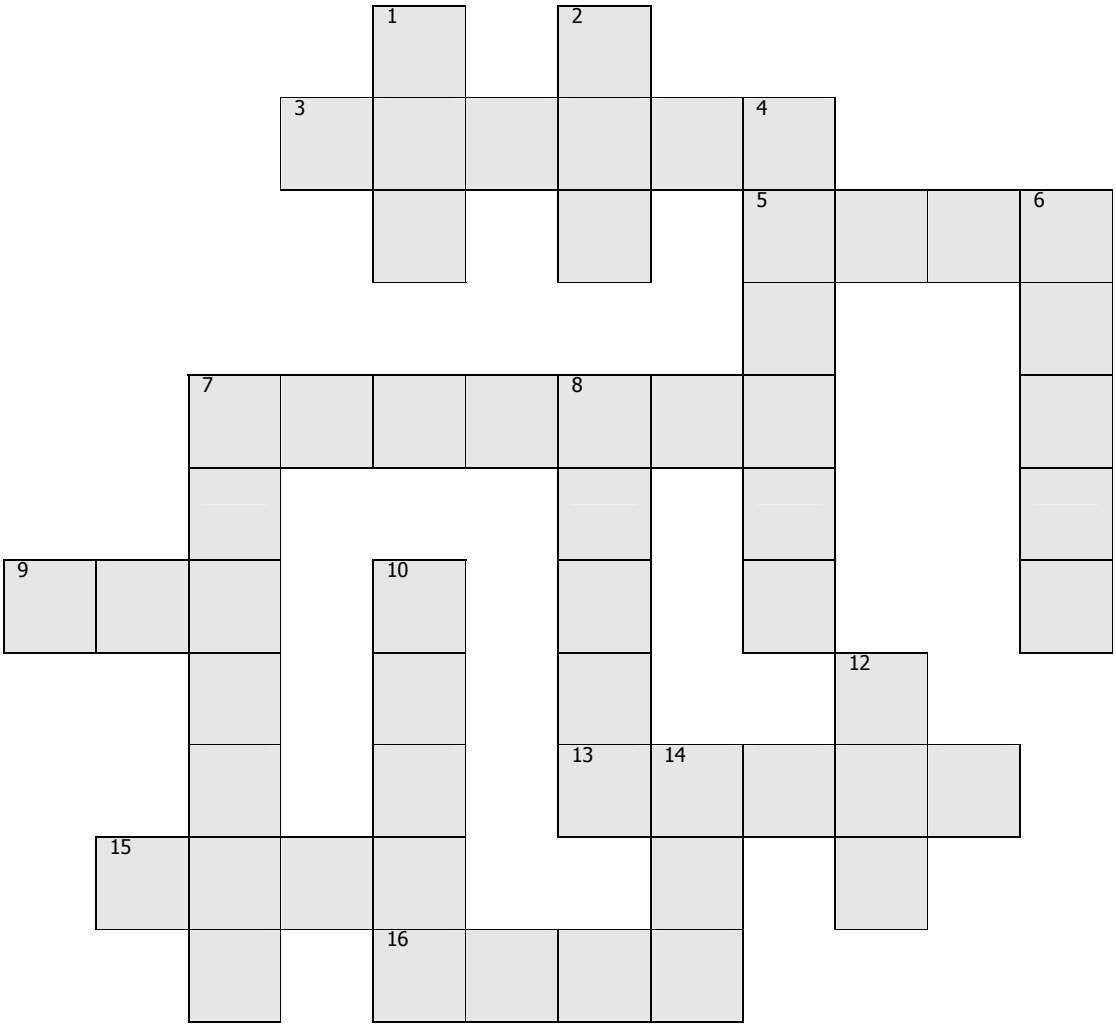
9. There were only ..... more children with initials D, E and F than M, N and O.

12. At the party there were ..... more children with initials A, B and C than S, T and U.

More Fractions

Degree of difficulty

★★



Across

3. Robina cut an orange into two equal pieces. Robert cut an apple into three equal pieces. Did Robina or Robert cut their fruit into thirds?

5. If Belinda ate one of the pieces of her orange (see last question) what fraction of the orange did she eat?

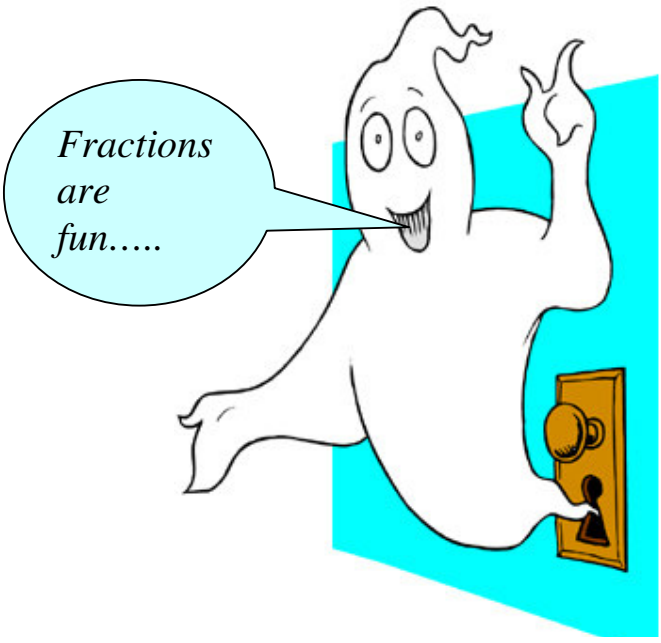
7. If Cathy cuts a pear into four pieces of equal size, each piece is one ..... of the whole pear.

9. If a watermelon has been cut into quarters and three quarters of it have been eaten, how many pieces are left?

13. Alice cuts a plum into quarters. She eats one piece and her friend Diana eats two pieces. Which girl eats half of the plum?

15. Jane and Jill each have an apricot. Jane cuts her apricot into three equal pieces; Jill cuts her apricot into four equal pieces. Each girl eats one piece of her apricot. Who eats the smallest piece?

16. In the fruit bowl there are four bananas. If Evan eats two of them and Toni eats one, who eats half of the bananas?



Down

1. Tim cuts an apple into three equal pieces. If he eats two pieces and Zoe eats the other piece, who eats one third of the apple?

2. A green apple is cut into four equal pieces and a red apple is cut into three equal pieces. Which colour apple is cut into thirds?

4. If Jane eats two pieces of an orange that has been cut into three equal pieces she has eaten two ..... of the orange.

6. Shane ate two out of four plums. Fiona ate three out of four apricots. Who ate three quarters of their fruit?

7. Rosanna and Quentin had two peaches of the same size. Rosanna cut her peach into quarters. Quentin cut his peach into halves. Rosanna and Quentin each ate one of their pieces. Who had the most to eat?

8. Rosie loves to eat plums. She cut a plum into three equal pieces and then ate one of those pieces. This means Rosie ate one ..... of the plum.

10. If James ate one quarter of an apple and Jane ate three quarters of the same apple then the two children ate the ..... apple.

12. Sandy saw an orange that had been cut into thirds. After she had eaten some of the orange there were two thirds of the orange left. How many pieces did Sandy eat?

14. Ian and Dot both like juicy peaches. If Ian ate a quarter of a juicy peach and Dot ate a third of a juicy peach who ate the least?

Money and Graphing

Degree of difficulty

★★

Dollars Saved *(see along the bottom)*

Veronica, Toni, Sheralee, Jaxon, Joanna, Naomi, Vincent, James, Matt

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

Across

3. The graph shows how many dollars the children saved.
Who saved $28?

5. Who saved $3 more than Vincent?

6. Sheralee was saving up for a $37 flower pot for her room. How many more dollars did she need?

8. How many more dollars did Jaxon need to buy a $42 bike helmet?

9. Who saved $5 less than James?

10. If Veronica spent $27 on a new computer game how many dollars did she have left?

12. Who saved $15 less than James?

Down

1. Matt wanted to buy a scooter which cost $56. How many more dollars did he need?

2. Someone saved $10 more than Naomi. Who was that?

3. Who had $5 left if he bought a model kit for $42?

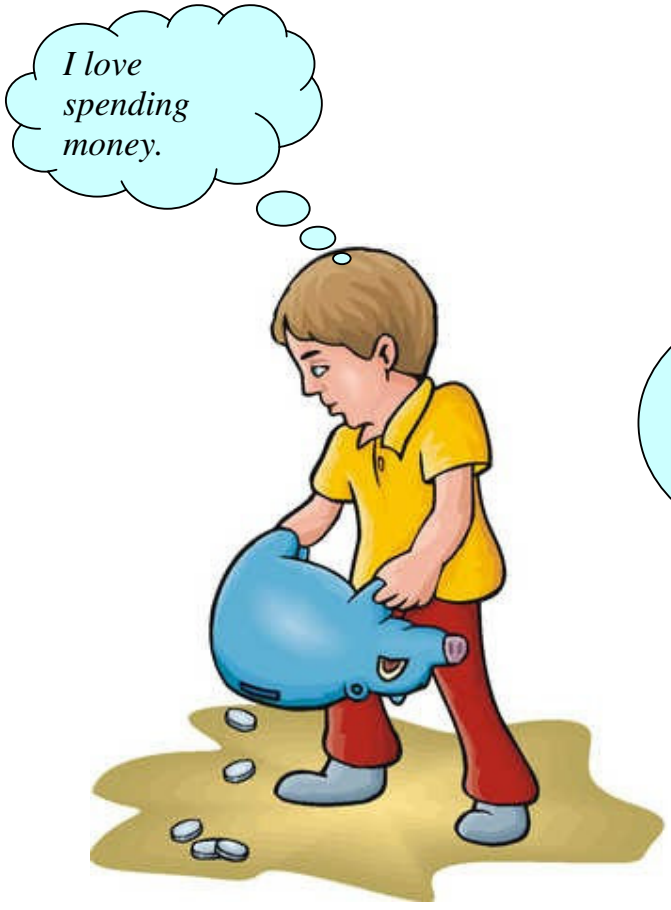
4. How many more dollars did Veronica need to save if she wanted to have as much as Sheralee?

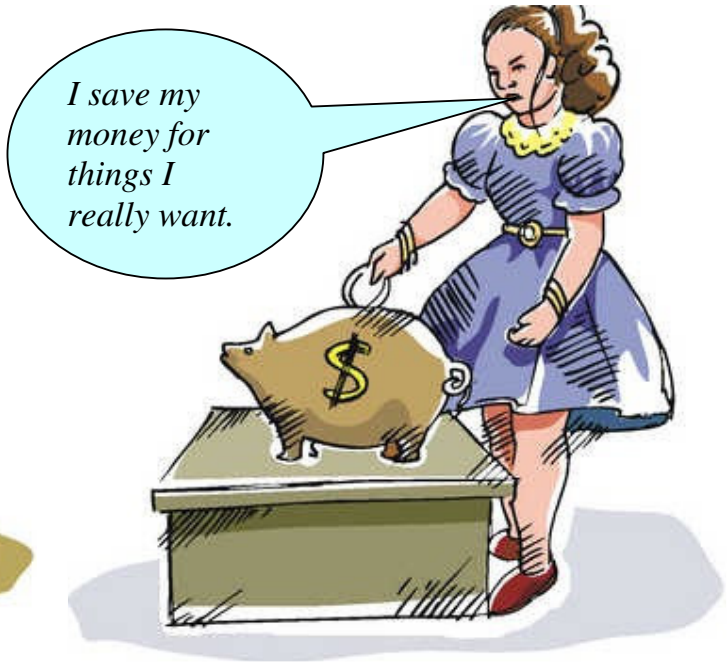
5. Someone needed another $10 if they want to buy a $50 clock-radio. Who was that person?

6. Who needed another $2 if she wanted to buy a $34 jigsaw puzzle?

7. Only one person saved more money than Jaxon and less than Naomi. Who was that?

11. How many people saved more money than Veronica but less than Sheralee?





Two-step Calculations

Degree of difficulty

★★★

At the Zoo

Across

3. Some children were throwing peanuts to the monkeys. Altogether 90 peanuts were thrown. If Diana threw 8 peanuts and Jamie threw 9 peanuts how many peanuts were thrown by other children? *hyphen*

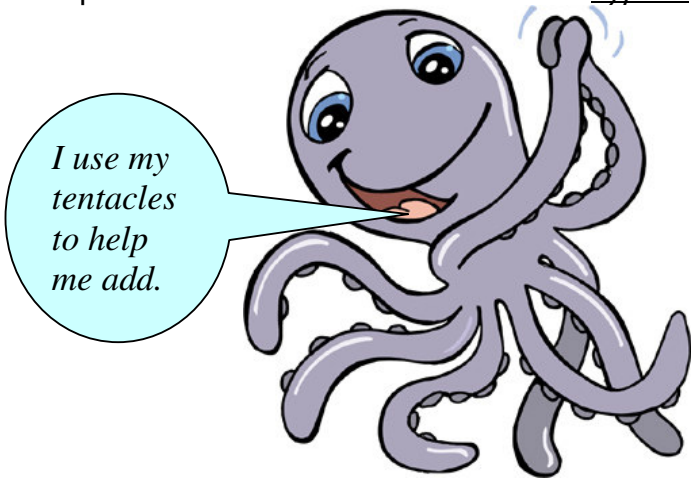
4. A group of 8 adults called 'Friends of the Zoo' came to see the monkeys. 5 of the group were men. Altogether there were 98 women who saw the monkeys that day. How many of these 98 women were not in the 'Friends of the Zoo' group? *hyphen*

8. There were 11 monkeys in the cage. Five were hanging from a branch and two were sitting on a branch. How many were neither hanging from a branch nor sitting on a branch?

11. Chad and Brendan walked over to look at the reptiles. They saw a snake whose head was 5 cm in length and which had a 6 cm black tip at the end of its tail. If the snake was 79 cm long how much of the snake did not include the head or black tip? ..... cm *hyphen*

13. Three elephants were giving children rides on their backs. One of the elephants (Ellie) had given 54 children a ride so far that day. Another elephant (Eva) had given 38 children a ride. How many children had been carried by the third elephant (Elsie) if 191 children had ridden on all three elephants? *hyphen*

14. The sign said *'Lions: 150 metres ahead'.* First the tigers (which were 30 metres away) had to be passed. The panthers were another 38 metres further on. How far were the lions from the panthers? ..... metres. *hyphen*



Down

1. There were three hippos rolling in the mud (a baby with its father and mother). The hippos weighed a total of 960 kg. The father weighed 480 kg and the mother weighed 410 kg. How many kilograms did the baby hippo weigh?

2. There were 7 polar bears. Two were swimming in the water. Four were lying in the sun and the rest were inside their cave. How many were inside the cave?

5. Danielle and Sarah were looking at the butterflies which were in two outdoor rooms. Room A had 58 butterflies. Room B had 10 less butterflies than it did yesterday because those 10 were being studied. If there were 42 butterflies in room B yesterday how many butterflies could Danielle and Sarah now see?

6. There were 12 giraffes and 6 of these were young. How many were adult males if there were 2 adult females?

7. There were 13 hyenas. If two were howling and three were sleeping, how many were awake but not howling?

9. Two of the alligators in the alligator pit were females. Lauren counted 44 alligator legs altogether. So how many male alligators were in the pit?

10. At the bird enclosure Bobby saw three flamingos, a stork and some other birds. Bobby counted all the birds' legs……. there were 18. So how many birds were there apart from the flamingos and the stork?

11. Sharon watched as two baby rhinos walked slowly behind their mother. There were other rhinos feeding. If there were 20 rhino eyes altogether how many rhinos were feeding?

12. Leanne saw three Argentine ants and a Goliath beetle but when she counted their legs there were only 23. How many of these insects had a missing leg?

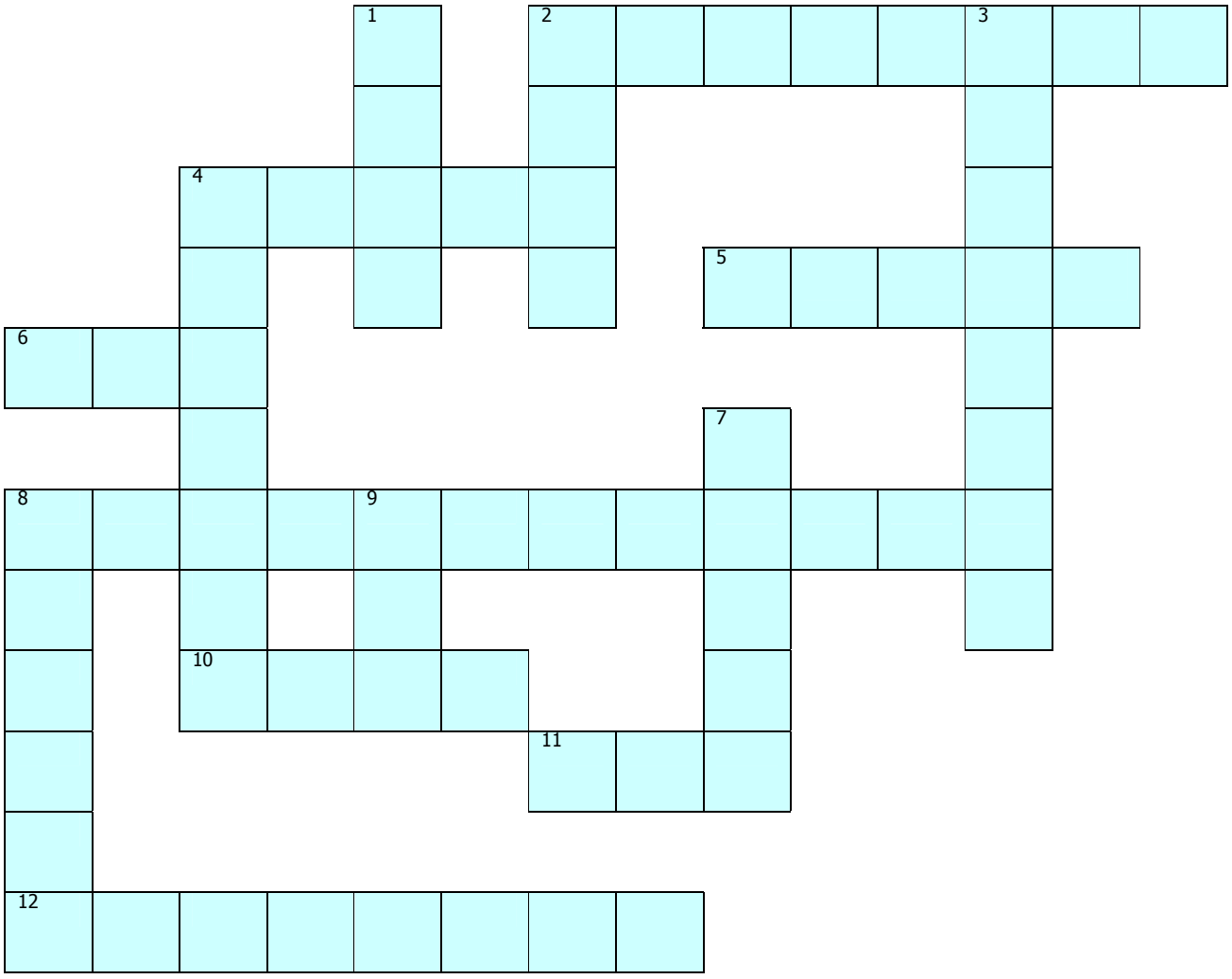
13. Lance loved looking at the creepy crawlies. He saw a scorpion and some spiders. Lance counted 80 legs. How many spiders were there? (spiders and scorpions both have 8 legs).

Real-Life Applications

Degree of difficulty

★★

If you enjoy school excursions you'll like these questions.



Across

2. Mrs James' class and Mr Watson's class were having a picnic at the lake. There were 59 children and 40 of these were girls. How many were boys?

4. Mary counted 62 trees near the lake. 55 of these trees had leaves. How many did not have leaves?

5. 40 children had an apple as part of their lunch. 28 children had a banana. This means there were sixty ..... apples and bananas altogether.

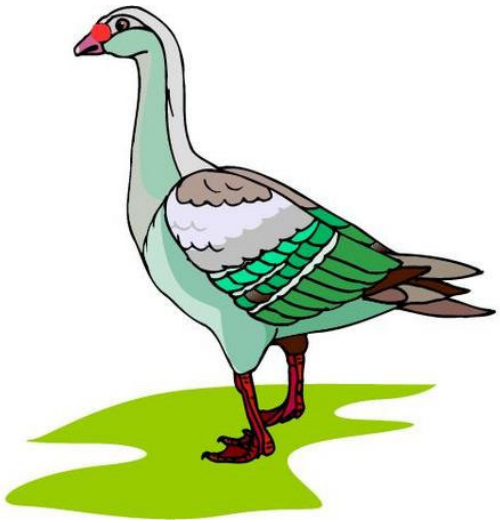
6. Daniel saw 29 swans swimming in the lake. Then he counted another 37 swans on the land. So altogether he saw sixty ..... swans.

8. The lady in the little shop at the lake said there were 84 children from another school at the lake earlier that day. How many more than 61 is this? *hyphen*

10. Bonnie swam in the lake. She swam 42 strokes. Then she swam another 37 strokes. Altogether she swam seventy ..... strokes.

11. Mrs James' and Mr Watson's classes had a game against each other. Mrs James' class scored 36 points. Mr Watson's class scored 35 points. Altogether seventy ..... points were scored.

12. The children had 48 minutes for lunch. They had 30 minutes for pony rides. How many more minutes did they have for lunch than for pony rides?



Down

1. Mrs James' class picked up 68 pieces of litter and put them in the bin. Mr Watson's class picked up 73 pieces of litter. How many more pieces of litter did Mr Watson's class pick up?

2. Belinda and Kathy had a game to see who could touch the most trees in three minutes. Belinda touched 45 trees and Kathy touched 54 trees. How many more trees did Kathy touch?

3. Tom and Andrew wanted to see who could do the most hops on their left foot. Tom hopped 71 times. Andrew hopped 89 times. How many more hops did Andrew do?

4. Katie and Sue played the same game as Tom and Andrew (see 3 Down). Katie did 51 hops and Sue hopped 67 times. How many more hops were done by Sue?

7. Gavin collected 51 leaves near the lake. Larry collected 42 leaves. Altogether the two boys collected ninety ..... leaves.

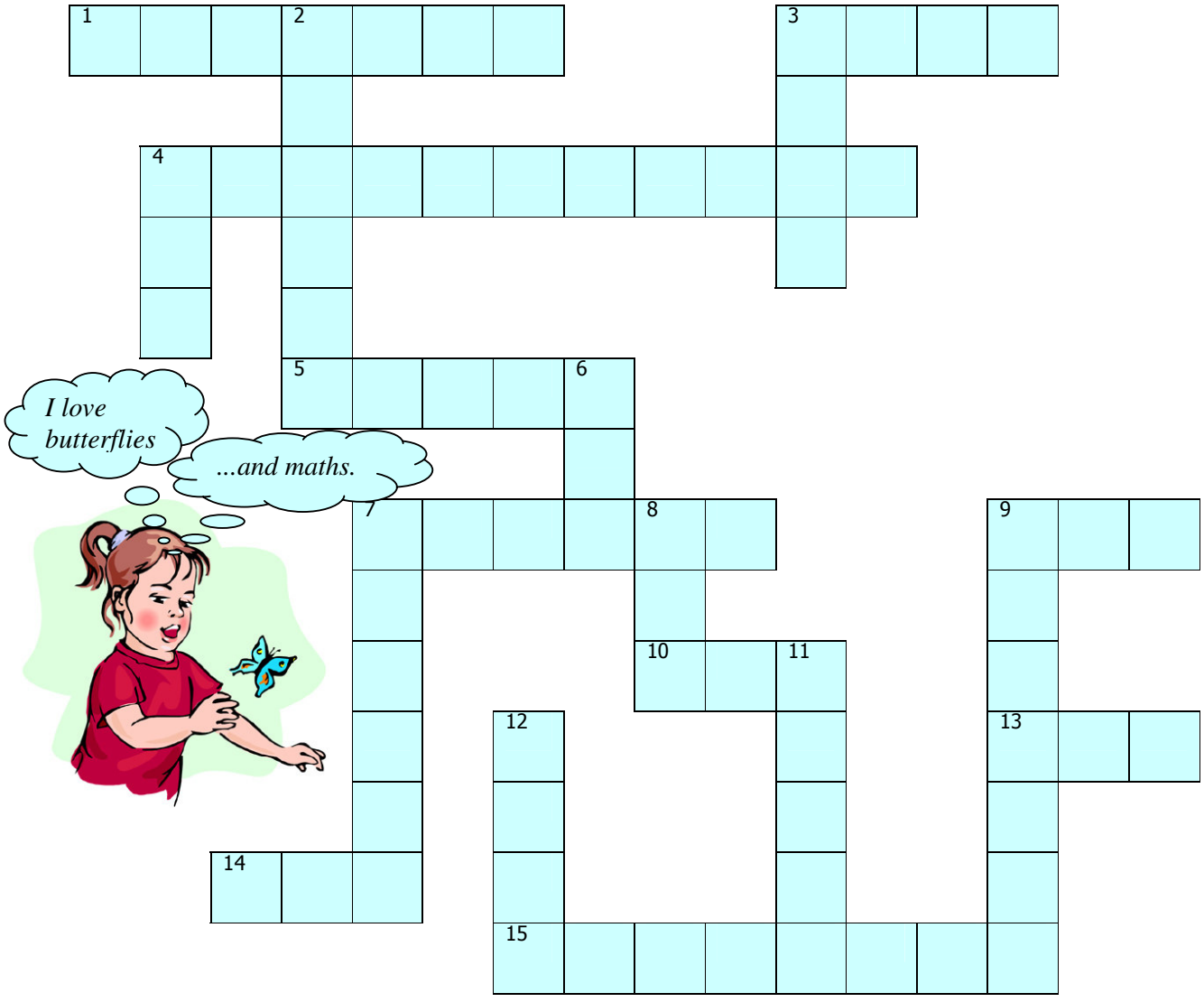
8. Emma and Ruth sat and watched the people walking along the path near the lake. Emma counted the adults and Ruth counted the children. Emma counted 64 and Ruth counted 52. How many more adults than children walked along the path?

9. Mrs James' class took 58 seconds to pack up and Mr Watson's class took 1 minute and 8 seconds to pack up. How many seconds faster were Mrs James' students?

Doubling and Halving

Degree of difficulty

★★



Across

1. Mother baked eight cakes. Double that number of cakes is ……..

3. We had ten glasses in the cupboard. Half that number of glasses is …….. .

4. Twelve plates were on the sink. Double that number of plates is ……. *hyphen*

5. Four big pans were in the cupboard. Double that number of pans is …… .

7. There were ten saucers on the sink. Double that number of saucers is …… .

9. Twelve cups were drying. Half that number of cups is …… .

10. There were two carrots in the basket. Half that number of carrots is …… .

13. Five plums were in the fruit bowl. Double that number of plums is …… .

14. There were two half-watermelons on the kitchen bench. These came from …… whole watermelon.

15. Nine potatoes were being heated on the stove. Double this number of potatoes is …… .

Down

2. In a bag on the kitchen bench there were six red apples. Double that number of apples is …… .

3. Eight bananas were in the fruit bowl. Half that number of bananas is …….. .

4. There were four oranges next to the bag of apples. Half that number of oranges is …… .

6. Mother had pealed five potatoes to make chips. Double that number of potatoes is …… .

7. In the cupboard were six mugs. Double that number of mugs is …….. .

8. There were four teaspoons in the sink. Half that number of teaspoons is …… .

9. Near the oranges there was a bag with eight lemons in it. Double that number of lemons is …… .

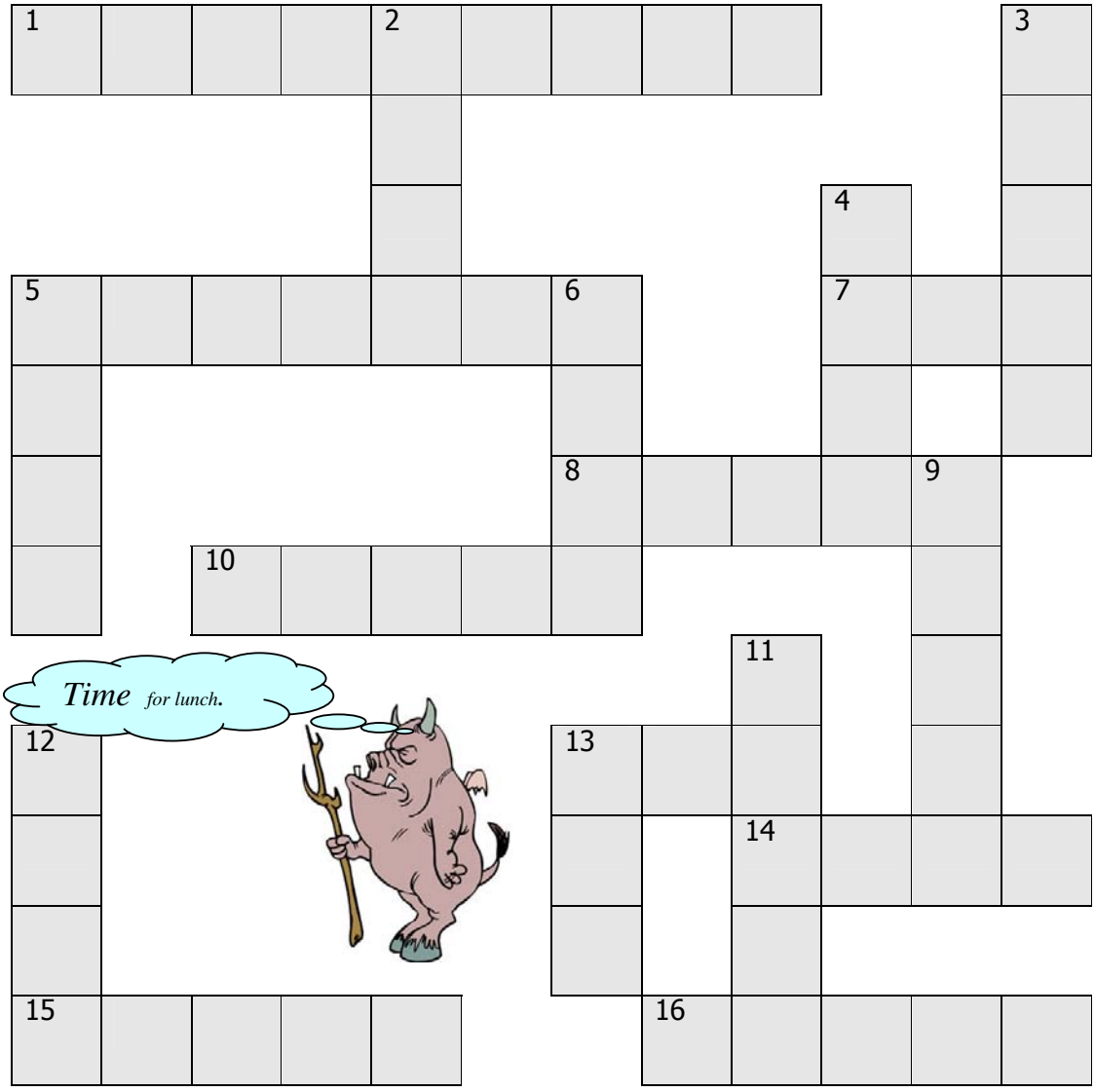
11. In the drawer there were four soup spoons. Double that number of soup spoons is …… .

12. Near the soup spoons were ten knives. Half that number of knives is …… .

Time: Larger Units

Degree of difficulty

★★★



Holidays

Across

1. Jackie's aunt is going to live in England for a year. For how many weeks will she live there? *hyphen*

5. Sally's big sister wants to spend a year in Japan. That's three ..... and sixty-five days.

7. If Benny and Mark go to Melbourne for fourteen days for how many fortnights will they be there?

8. Jack's cousin went with his family to live in China for twenty-four months which is two ..... .

10. Wendy spent a month in Victoria. A month is the same as four ..... .

13. Uncle Bob is coming to visit from Ireland. He will be staying for a fortnight. How many weeks is that?

14. Adam went to Sydney for a week and two days. How many days is that altogether?

15. Cherie's gran is visiting from Wales and will be staying for a week and a day. How many days is this altogether?

16. If Jerry goes to Scotland for thirty-six months, for how many years will he be there?

Down

2. Look at these: *hour, day, year, week, month* Elise went to Tasmania for the longest period above. So she was in Tasmania for a ..... .

3. Richie's parents went for a holiday to New Zealand for twenty-two days. That is one day more than ..... weeks.

4. Alison's friend lived in Darwin for two months. That's the same amount of time as one month plus about ..... weeks.

5. If Evelyn lived in Perth for six months she lived there for ..... a year.

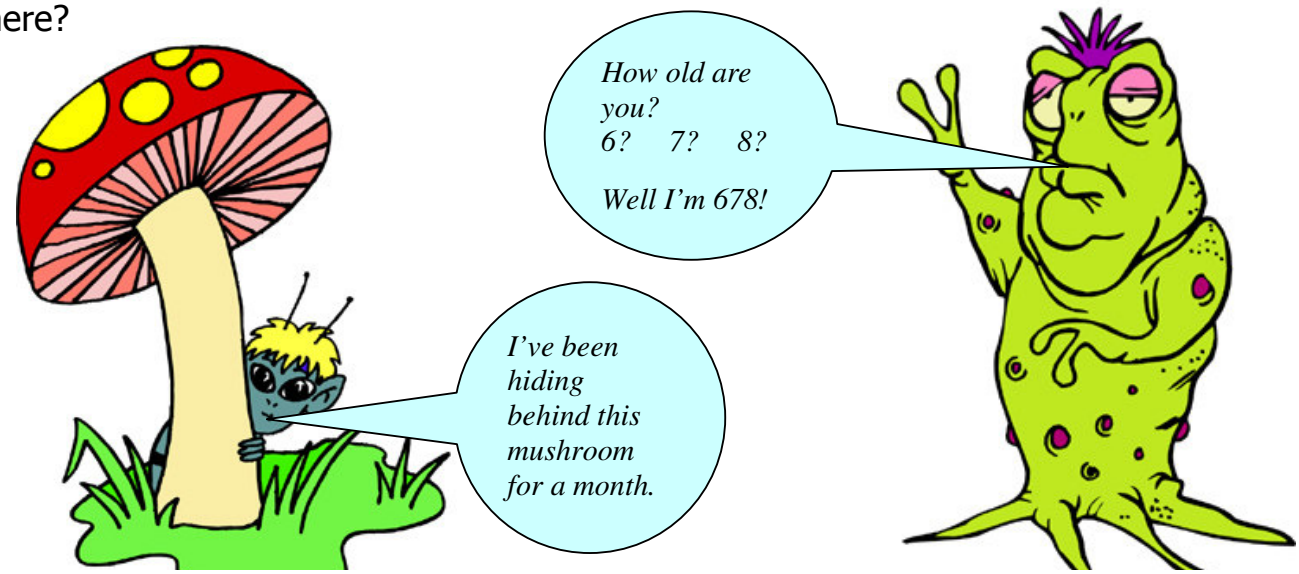
6. Bobbie was in Adelaide for all of January. That's thirty-one ..... .

9. Daniel spent a week holidaying in the mountains; that's ..... days.

11. "We go on a long holiday every leap year," said Peta. "That's when there are twenty-nine days in the ..... of February."

12. Debbie's family had a skiing holiday for one week. They didn't ski on two days but they did on the other ..... days.

13. Charles went on holidays for twenty-eight days, which is ..... fortnights.

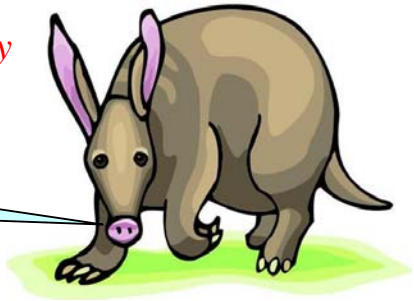


Comparisons and Quantifiers

Degree of difficulty

★★

How does my snout compare with a fox's?



Across

2. Three girls picked up some snow. Daisy had her hands full of snow, Belinda's hands were fuller but Carolyn's hands were the …….. .

4. James bent down low to fix the snowman, Adam bent down …….. but Robbie bent down the lowest.

6. Cassie climbed high up the snowy slope, Annabelle climbed …….. but Chantelle climbed the highest.

7. Hannah was feeling warm in her winter clothes. Candice was feeling …….. but Becky was feeling the warmest.

9. Chris, Edward and Adam went skiing. When the sun came out …….. was feeling hot, Chris was feeling hotter but Adam was feeling the hottest.

10. Fran had the most snow in her pile, Celia had less but Janice had the …… .

14. Three boys made snowballs. Basil made a heavy snowball, Wesley's was heavier but Roland's was the ……..

Down

1. There was just a little bit of snow on the bottom of the slope, more in the middle of the slope but …… on the top of the slope.

3. The temperature was low at the bottom of the mountain, ……. half way up but lowest at the top of the mountain.

5. Sandra, Rennae and Jane have all been to the snowfields. Sandra has been to the snowfields a lot of times, Jane has been even more times but …….. has been the most times.

6. Simon's snowball was heavy, Max's was …….. but Frankie's was the heaviest.

8. After running around throwing snowballs Linda felt warm, Sheila felt warmer but Mary felt the …….. .

11. Thea, Cindy and Candice rode their toboggans. Candice had some bumps, Cindy had more bumps but …….. had the most bumps.

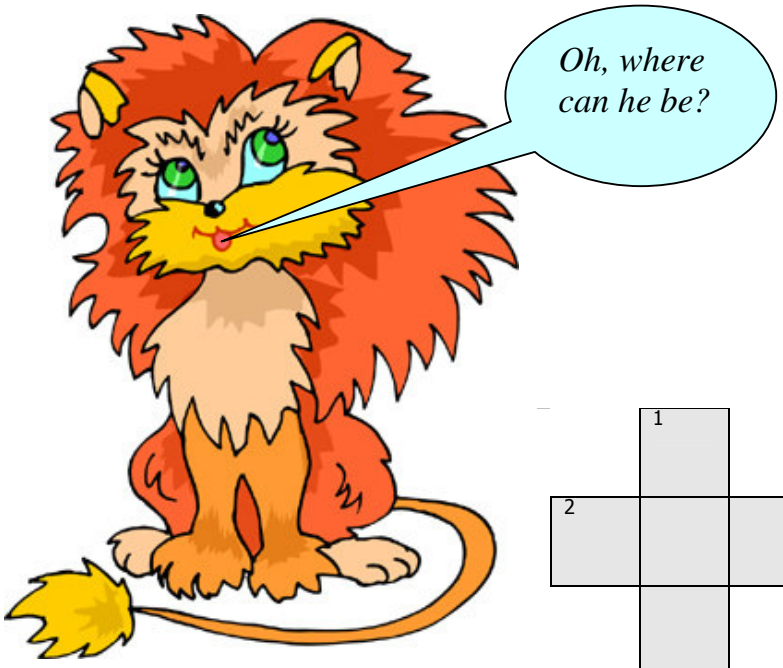
12. Bradie, Ted and Kane made snowballs. Bradie made the most snowballs, Kane made fewer and …….. made the fewest.

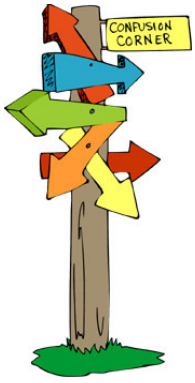
13. Sandy, Eve and Teresa made a snowman. ……. did the most work, Teresa did less and Sandy did the least.

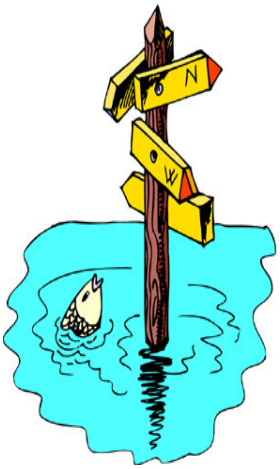
Finding Directions

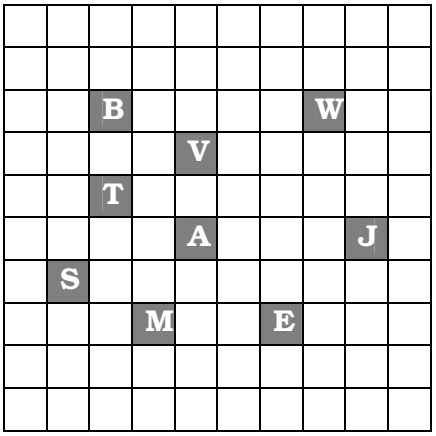
Degree of difficulty

★★









Names are represented by their first letters on the grid.

Across

2. To get from Jane's house to Matilda's house you go ..... squares to the left and two squares down.

4. Anthony lives ..... squares to the right of Sam and one square up.

5. To get from Jane's to Walter's you go ..... square to the left and three squares up.

7. Is it Tom or Billy who lives five squares to the left of Walter and two squares down?

9. Who lives one square to the right of Matilda and four squares up?
Is it Ella or Vula?

13. Would you go five squares to the left or five squares to the right if you wanted to go from Walter's to Billy's?

14. Is Jane's house four squares to the left or right of Anthony's?

15. Vula lives two squares to the right and ..... square up from Tom.

Down

1. Going from Walter's to Ella's you would travel ..... squares down and one square to the left.

3. Sam lives one square up and ..... squares to the left of Matilda.

4. To get from Anthony's to Ella's you need to go two squares to the right and ..... squares down.

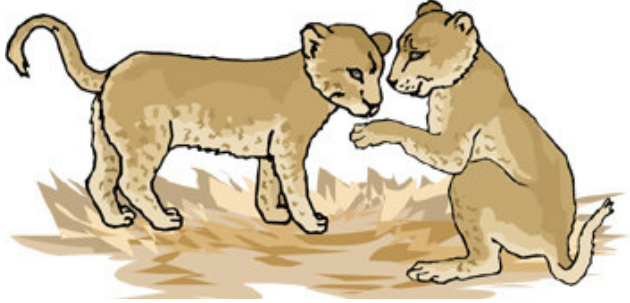
6. Who lives four squares down and two squares to the right of Vula?
Is it Ella or Sam?

8. Someone lives 5 squares down and one square to the right of Billy.
Is it Ella, Jane or Matilda?

10. Does Matilda live three squares to the left or right of Ella?

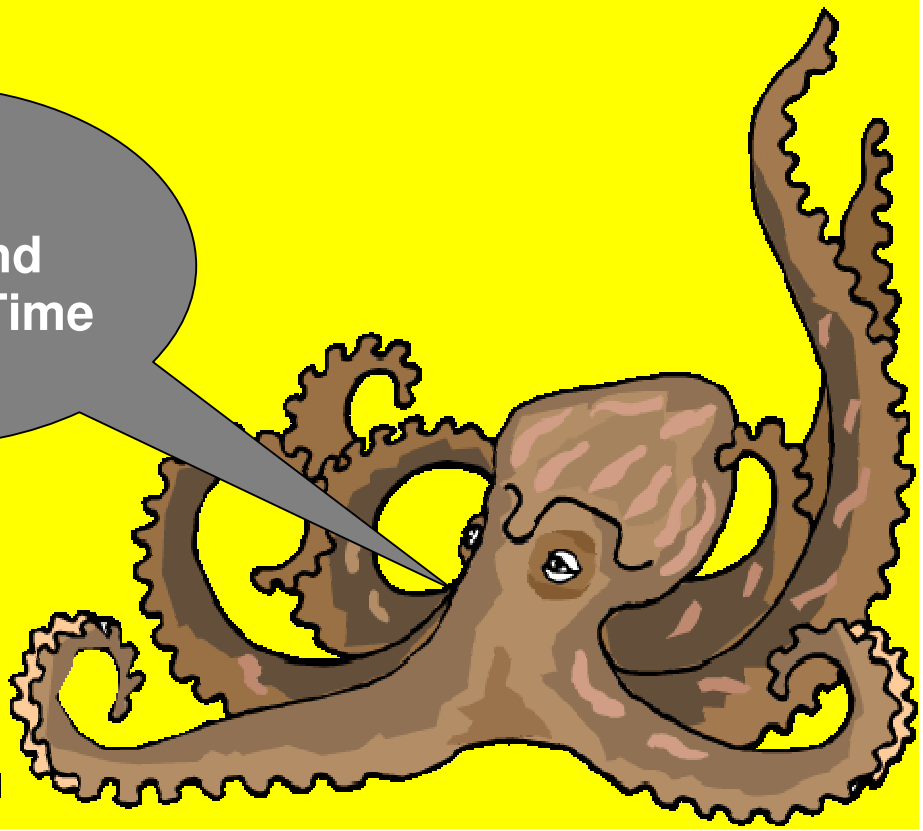
11. Who lives one square down and two squares to the right of Tom…….is it Walter or Anthony?

12. Vula lives ..... squares to the left and one square down from Walter.

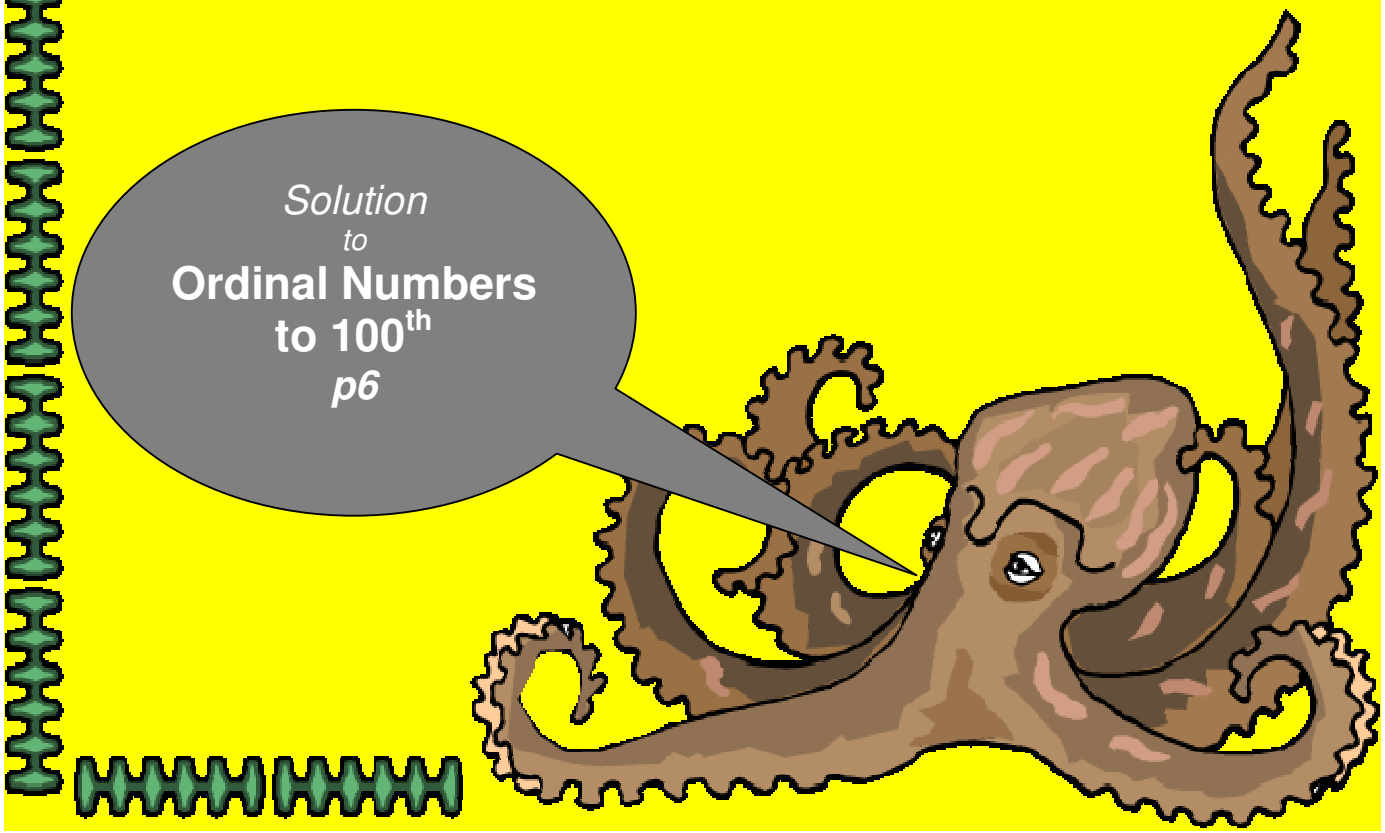


			S	I	X	T	Y		
	F	I	V	E		W			
	I			V	F	O	R	T	Y
	F			E				W	
	T	W	E	N	T	Y		E	
	E					T		L	
T	E	N				W		V	
	N			E	L	E	V	E	N
			T			L			I
			E			V		O	N	E
		M	I	N	U	T	E	S		E

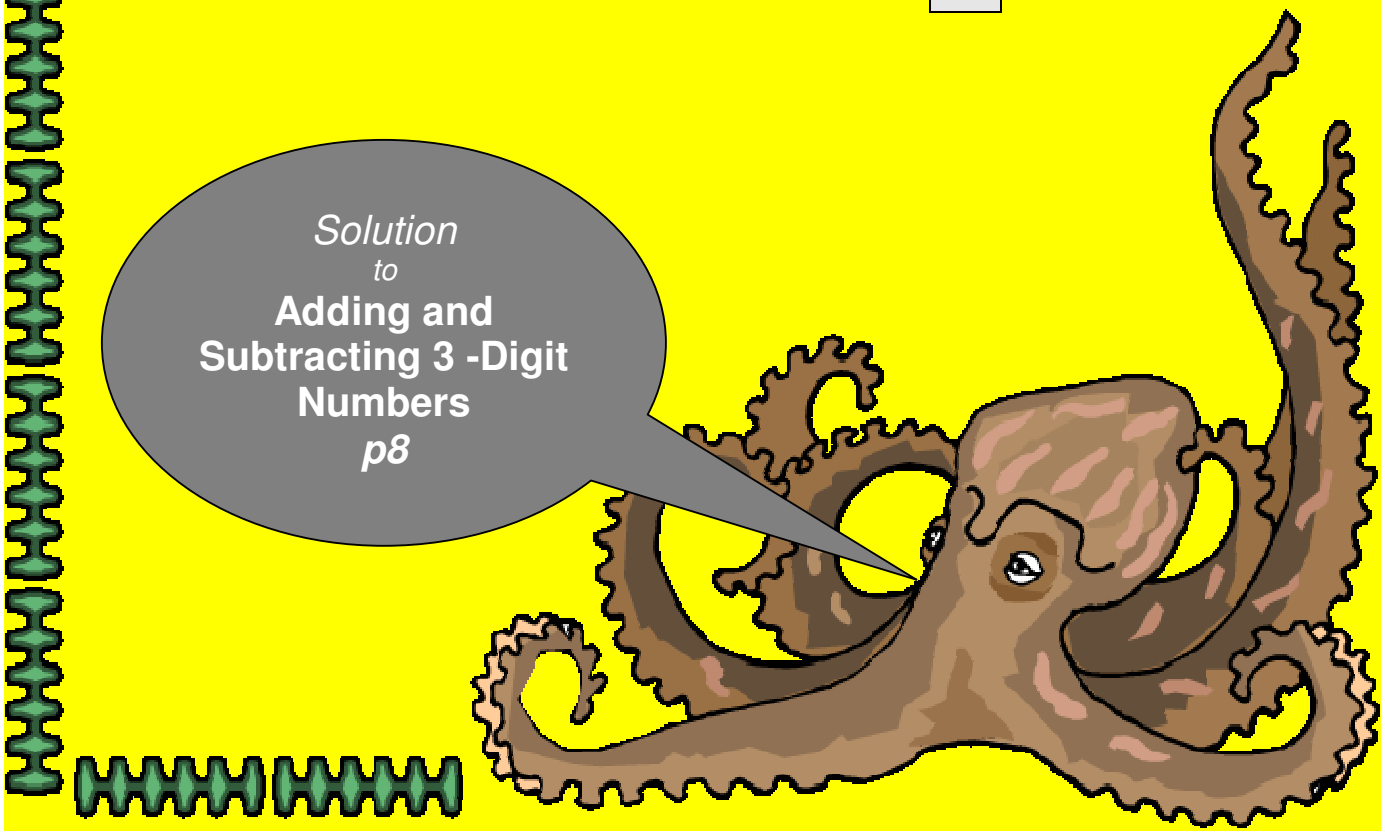
Solution
to
Digital and Analogue Time
p4



			S	I	X	T	H			
F	I	V	E				H			
			V			F	O	U	R	T	H
		T	E	N				N		
	S		N					D		
S	I	X	T	Y	-	F	I	R	S	T	
	X		I			I		E			S
			E			F		D			E
N	I	N	T	H		T		T			C
I			H			H		H		N	O
N											N
E	I	G	H	T	Y	-	T	H	I	R	D

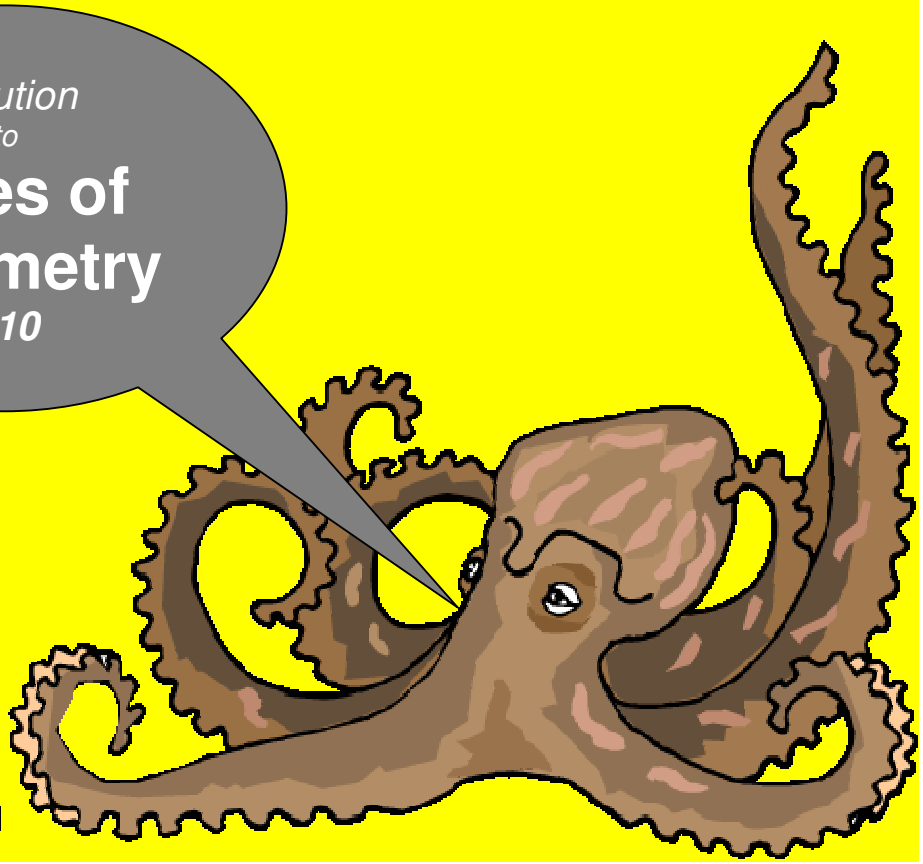


N	I	N	E	T	Y	-	F	I	V	E
		I					I			
	O	N	E				F			
		E		S		T	W	E	L	V	E
				I		Y		I			I
			S	I	X			G			G
	N				T			H			H
S	I	X	T	Y	-	E	I	G	H	T			T
	N					E				O	N	E
	E		E			N						E
	T		I							S		N
	E	I	G	H	T	Y	-	N	I	N	E		
	E		H								V		
	N		T	W	E	N	T	Y	-	S	E	V	E	N
											N		



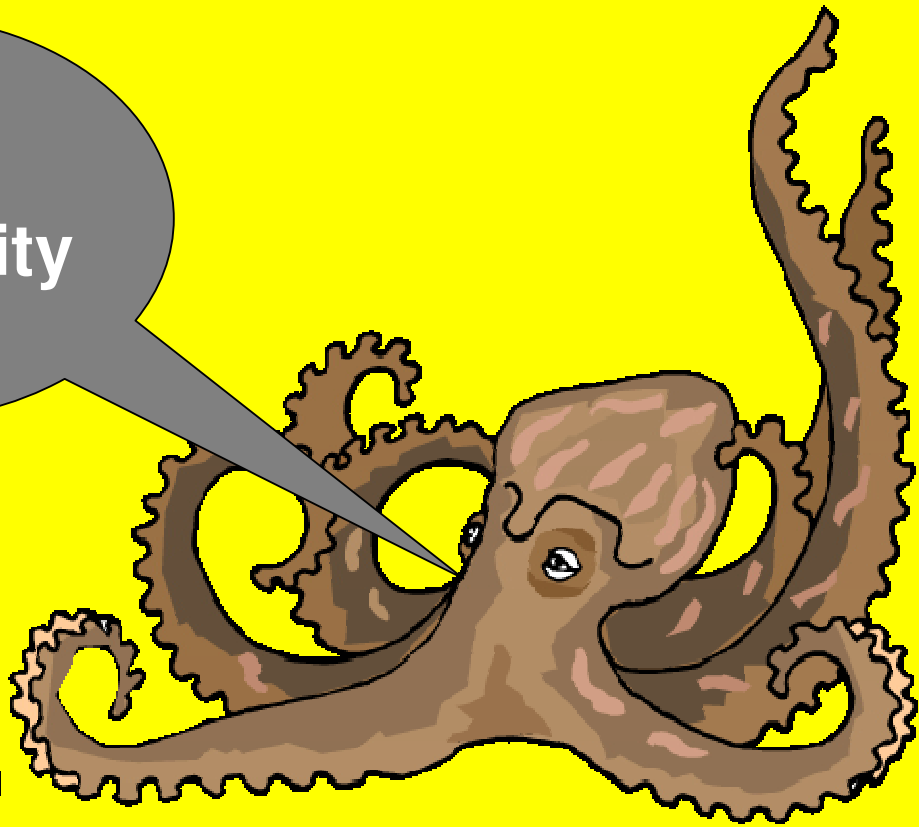
												F	O	U	R
												A			E
					R	E	C	T	A	N	G	L	E		C
							I					S			T
					F		R					E			A
			T	W	O		C								N
					U		L								G
			T	H	R	E	E								L
			R									T	R	U	E
			I									W			
			A			Y					N	O			
			N	O	N	E									
	A		G			S									
	X		L												
L	I	N	E	S											
	S														

Solution
to
Lines of Symmetry
p10



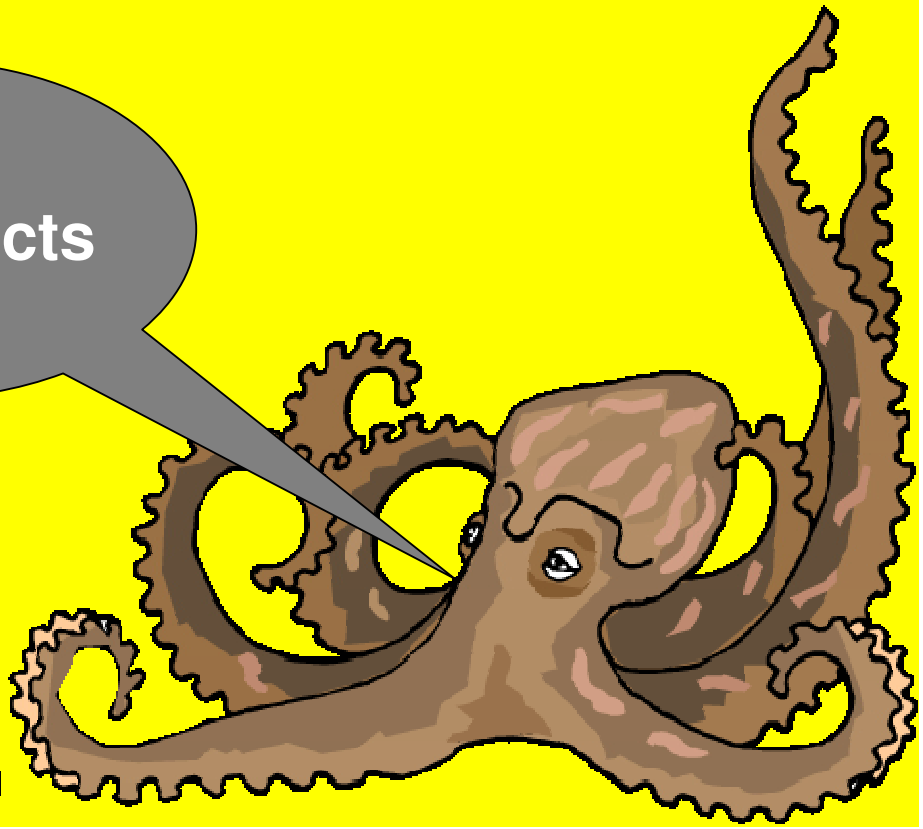
		U	N	L	I	K	E	L	Y	
				I				I		L
				K				A		I
J	E	R	E	M	Y		M	I	K	E
			L						E	
M	A	R	Y			J	O	E	L	
							N		Y	
				F	I	V	E			
		T	W	O				T	W	O
				U				E		N
				R	O	X	A	N	N	E

Solution to **Probability** ***p12***



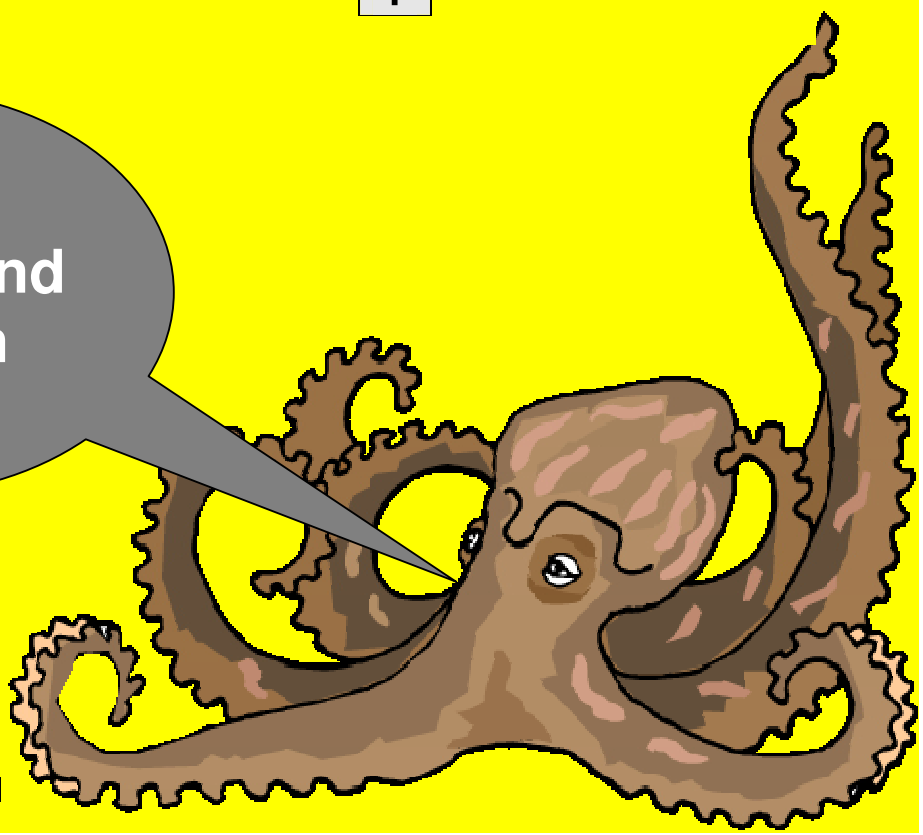
		P	Y	R	A	M	I	D
		R						
		I						
		S	P	H	E	R	E	
		M				O		
					S	U	N	
			F			N		
	F	L	A	T		S	I	D	E	S
			C			T				
	C	O	N	E		E	D	G	E	S
	U			S	A	M	E			
	B						P	O	I	N	T
L	E	N	G	T	H					

Solution
to
3-D Objects
p14



						S			
						I			
				S	I	X		T	
	T	H	R	E	E			W	
	W				V		T	W	O
F	O	U	R		E		E		
I					N	I	N	E	
V									
E	I	G	H	T		T			
				E		E			
				N	I	N	E		
							I		
							G		
							H		
							T		

Solution
to
Sharing and Division
p16

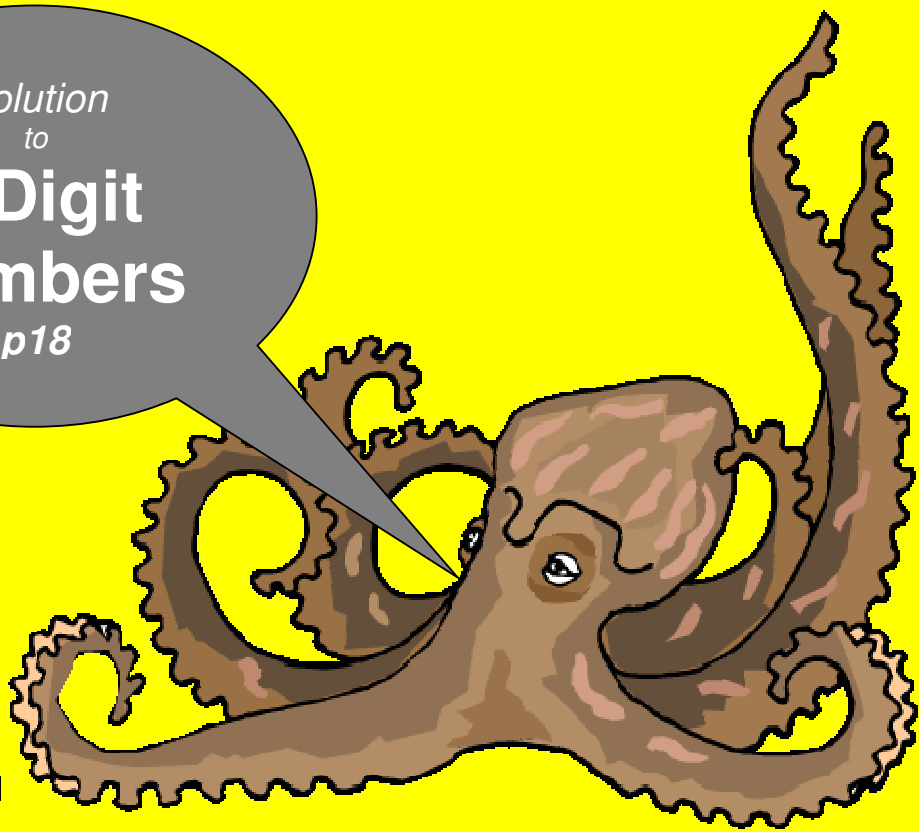


			F	O	U	R				
				N						
S	E	V	E	N	T	Y	-	S	I	X
								I		
F	O	R	T	Y	-	S	I	X		F
				W				T	W	O
				E				E		R
		N	I	N	E			E		T
		I		T				N		Y
		N		Y	E	S				
	T	E	N							
			O							

Solution to

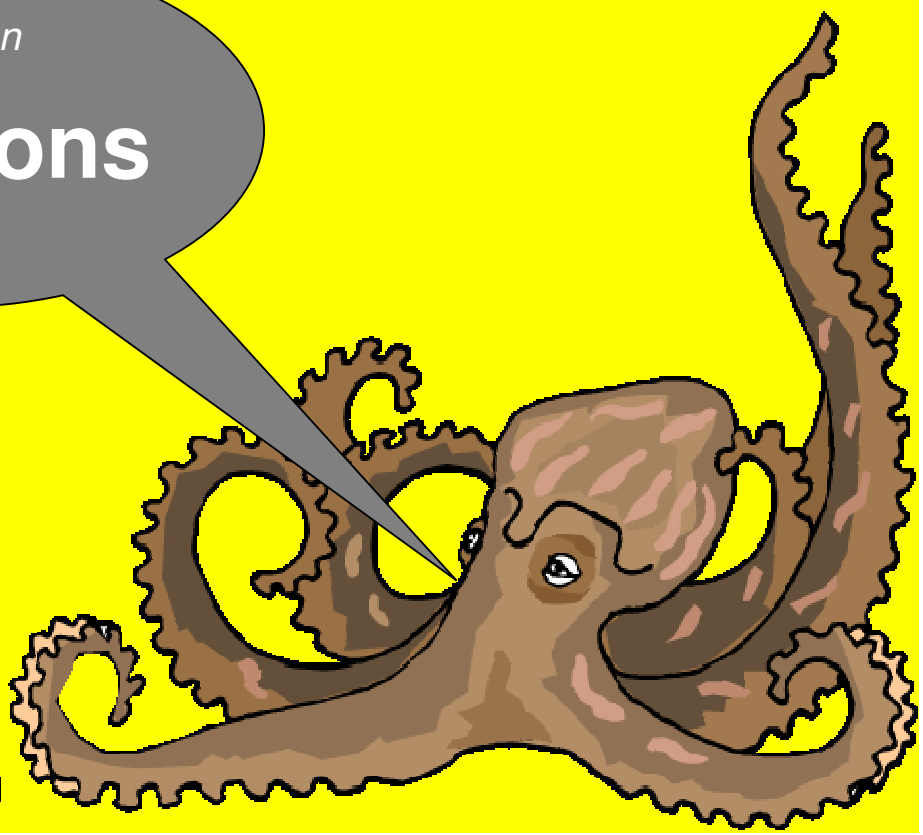
2-Digit Numbers

p18

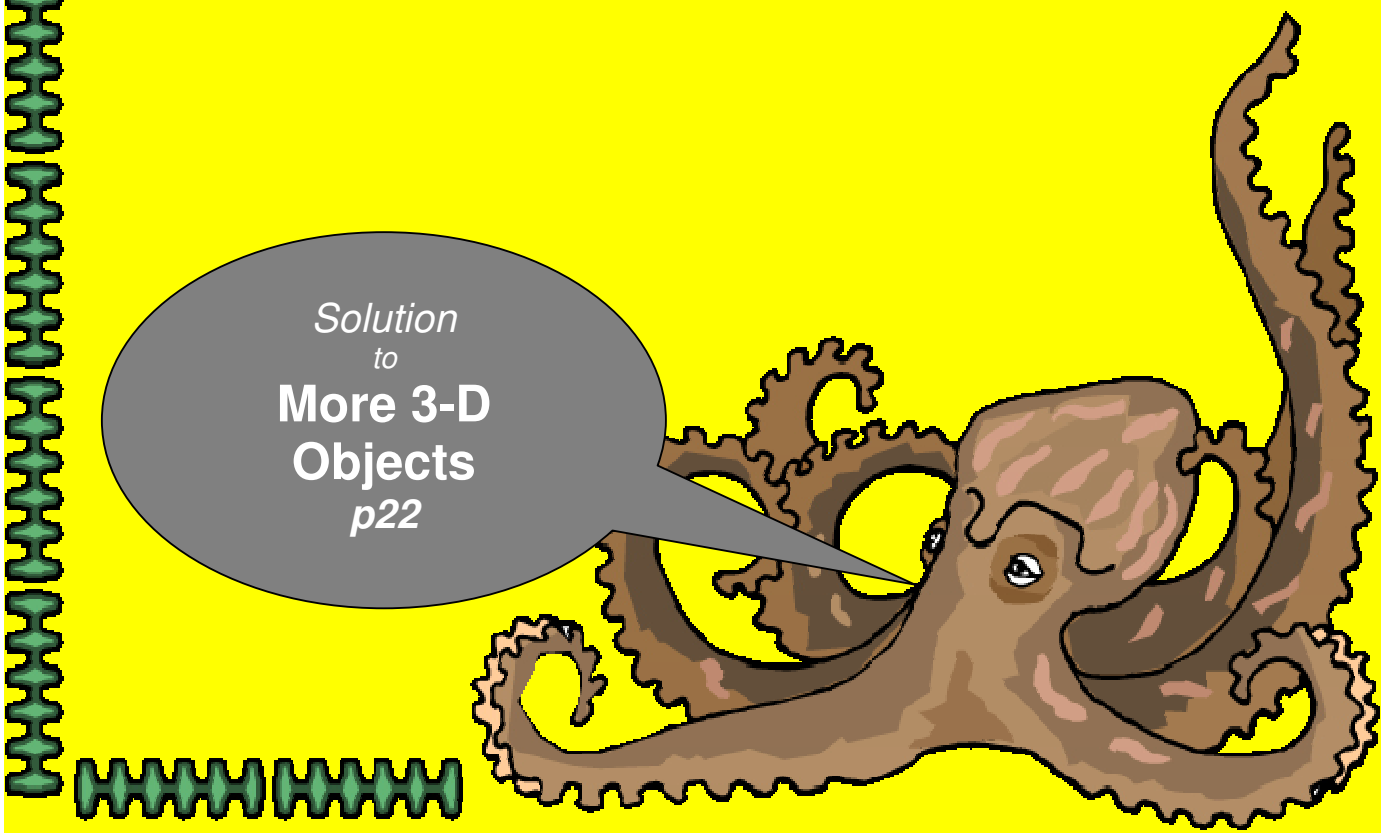


	A			J	O	N	N	O			
	I							N			
	D		Q	U	A	R	T	E	R	S	
	E		U				W			U	
A	N	N	A		T	W	O			Z	
N			R							I	
D			T	H	I	R	D	S		E	
R			E			U					
B	E	N	R			T	H	R	E	E	
	W		S	E	T	H					
					W						
					O	N	E				

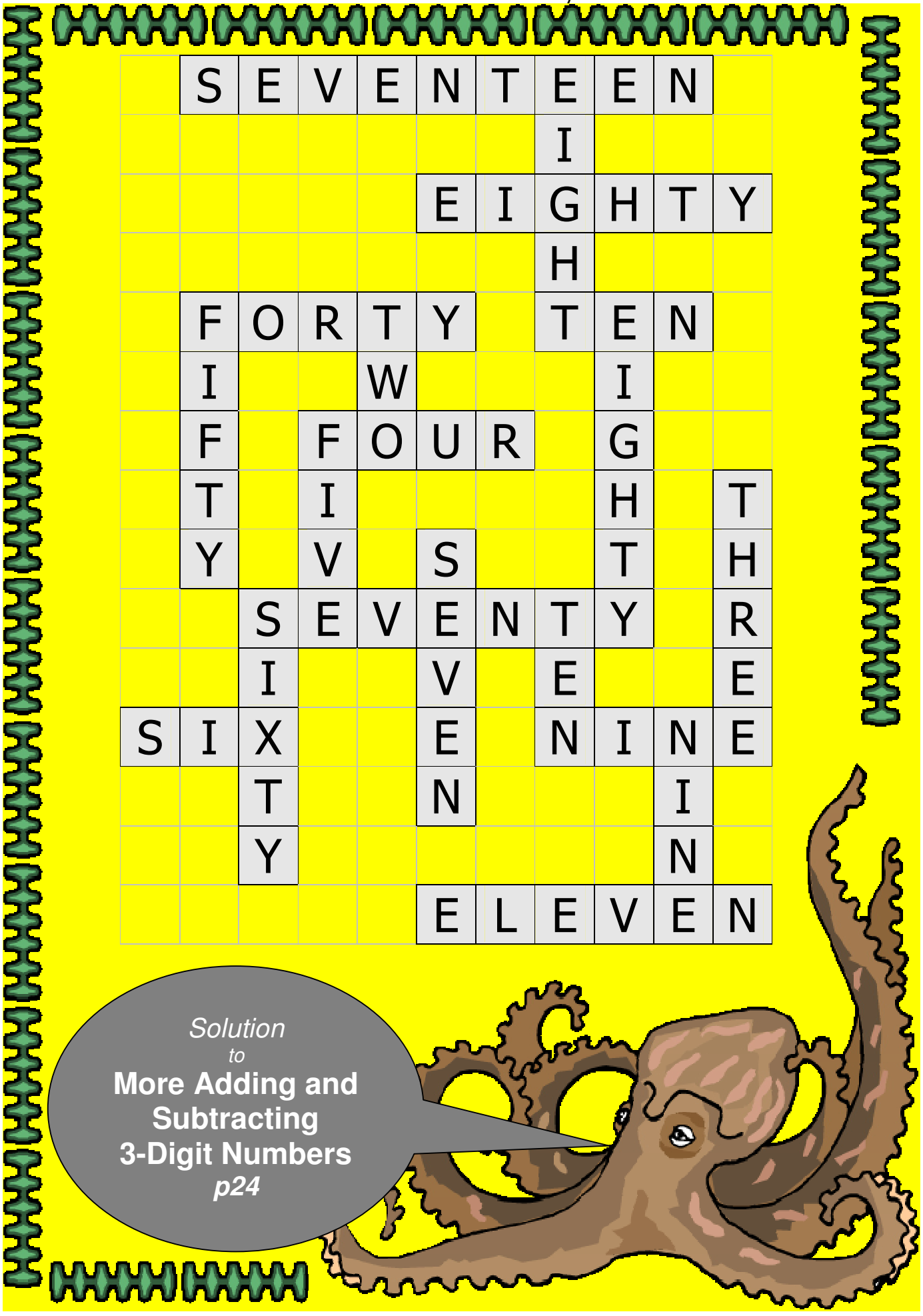
Solution
to
Fractions
p20



								S	P	H	E	R	E			
									R							
				P	Y	R	A	M	I	D						
						E			S					T		
						C			M					W		C
						T					C	O	N	E		Y
			S	Q	U	A	R	E						L		L
						N								V		I
		S				G					F	I	V	E		N
T	R	I	A	N	G	U	L	A	R		A					D
		X				L					C	I	R	C	L	E
						A		S			E					R
				V	E	R	T	I	C	E	S					
								X								



	S	E	V	E	N	T	E	E	N	
							I			
					E	I	G	H	T	Y
							H			
	F	O	R	T	Y		T	E	N	
	I			W				I		
	F		F	O	U	R		G		
	T		I					H		T
	Y		V		S			T		H
		S	E	V	E	N	T	Y		R
		I			V		E			E
S	I	X			E		N	I	N	E
		T			N				I	
		Y							N	
					E	L	E	V	E	N

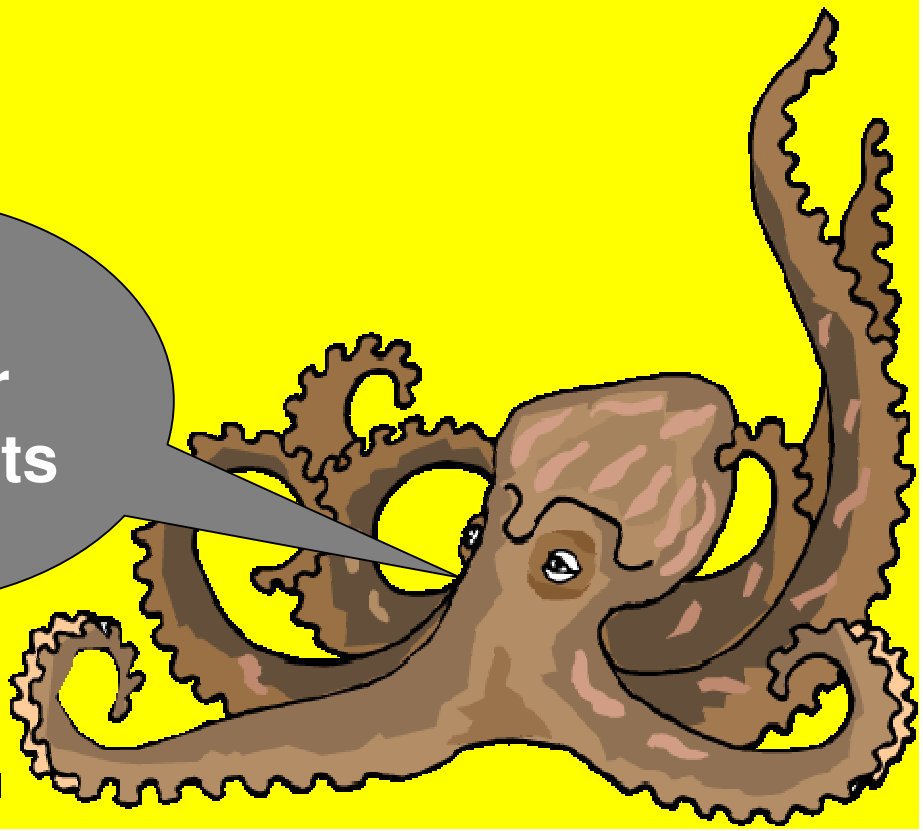


				M		M			
			S	E	C	O	N	D	
				T		R		A	
		H	O	U	R		E		Y
	N	O			E				
		U		S		M		Y	
		R		E		I		E	
		S	E	C	O	N	D	S	
	L					U			
C	E	N	T	I	M	E	T	R	E	S
	S		W				E			I
	S		O		L	E	S	S		X

Solution to

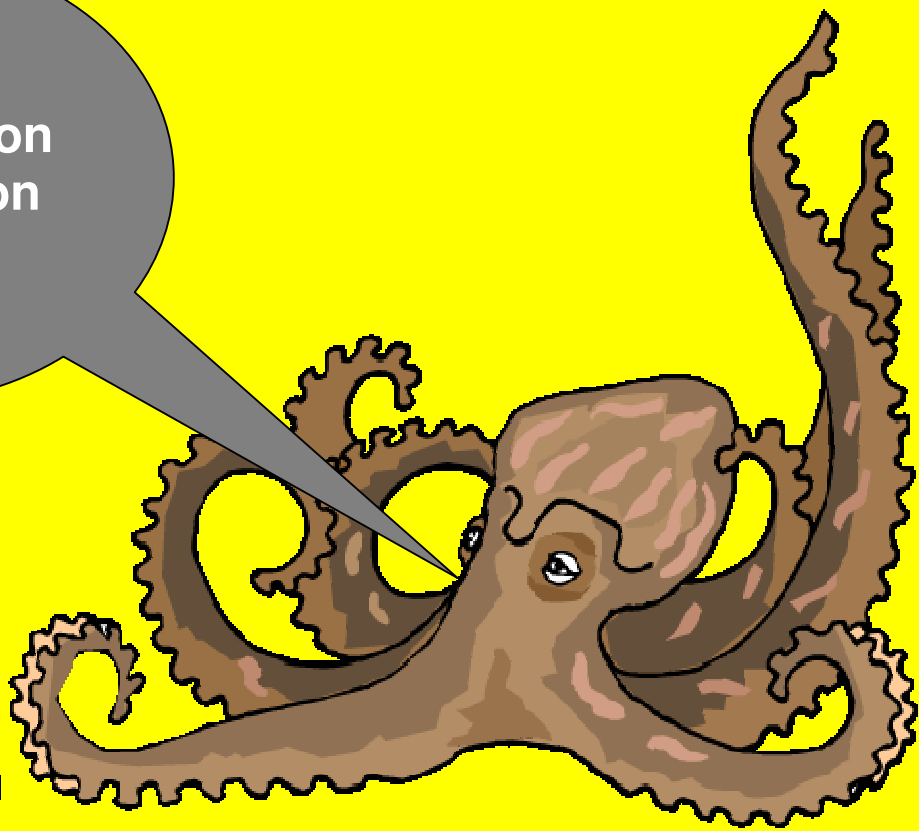
Smaller Time Units

p26



												F		
												I		
							F					F		
						S	I	X	T	Y		T	W	O
	T						F		W			E		
T	W	E	N	T	Y	-	T	W	O			E		
	E		I				Y			T	E	N		
	N		N							W				
	T	W	E	N	T	Y	-	O	N	E				
	Y			I				V		N	O			
			O	N	E			E		T				
				E		F	O	R	T	Y				

Solution to **Multiplication and Division Facts** *p28*

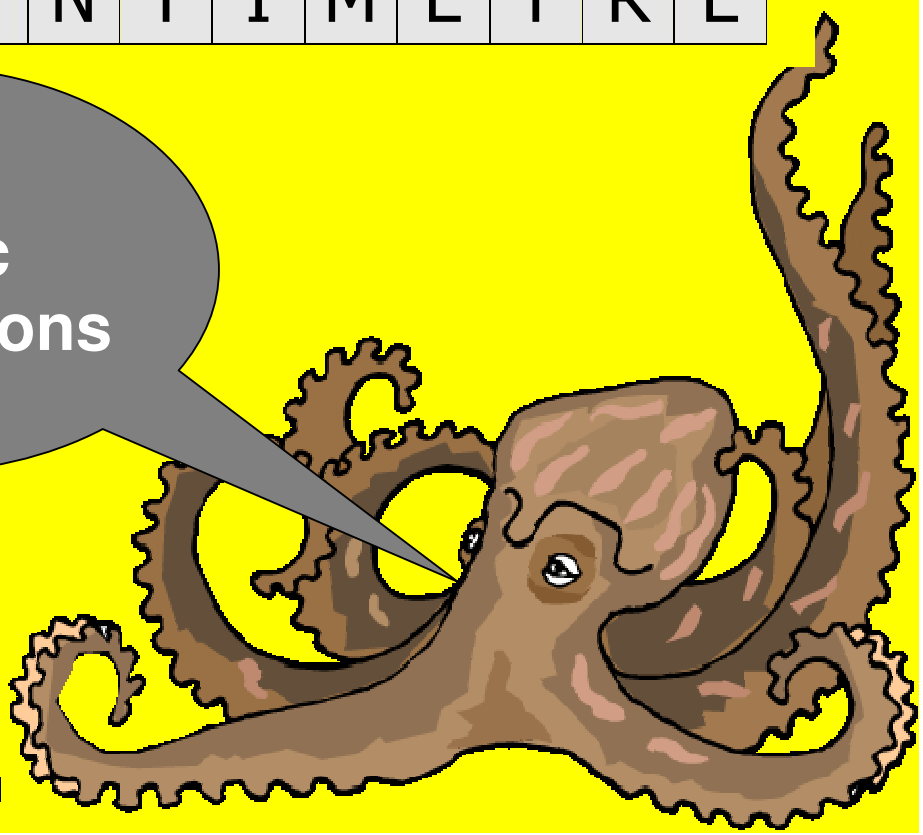


					F	O	U	R			
	K					N			T	E	N
M	I	L	L	I	M	E	T	R	E		I
	L				E		H		N		N
	O	N	E		T	W	O				E
	M				R		U				T
	E				E		S				Y
	T	W	O				A				
	R						N		C		
	E			H	U	N	D	R	E	D	
									N		
		C	E	N	T	I	M	E	T	R	E

Solution to

Metric Conversions

p30

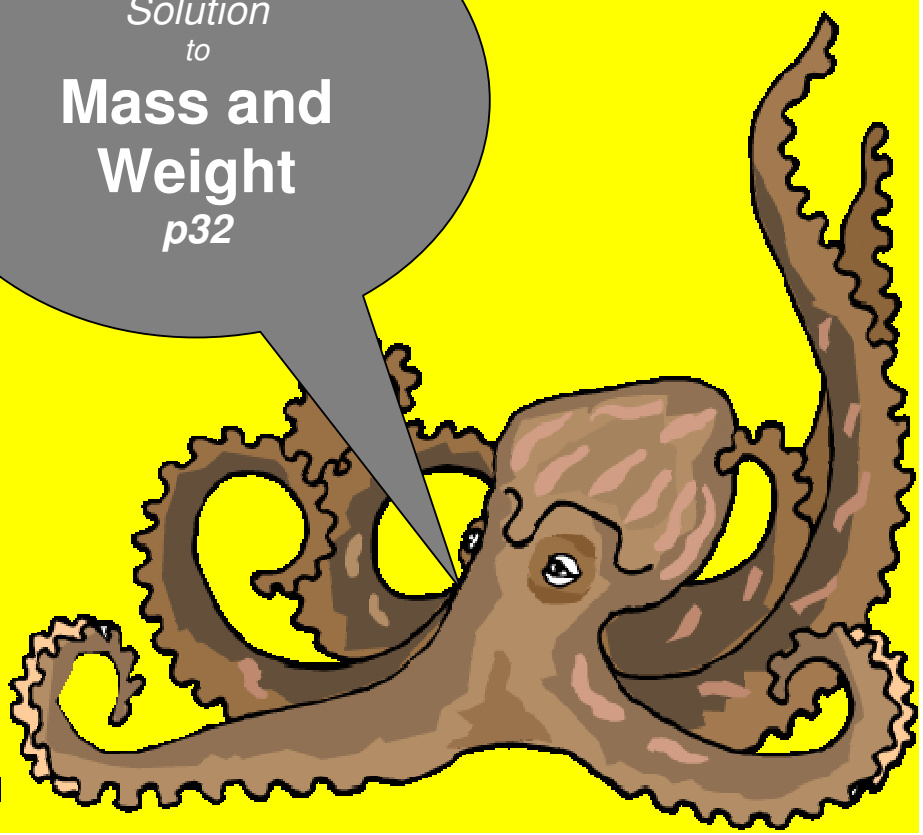


						T	H	O	U	S	A	N	D
						H							O
					G	R	A	P	E		O		G
				K		E				A	N	T	S
			F	I	V	E					E		
				L									
	K	I	L	O	G	R	A	M			M		
			E		R			A		N	O		
C	A	T	S		A			S			R		
			S	A	M	E		S	E	V	E	N	

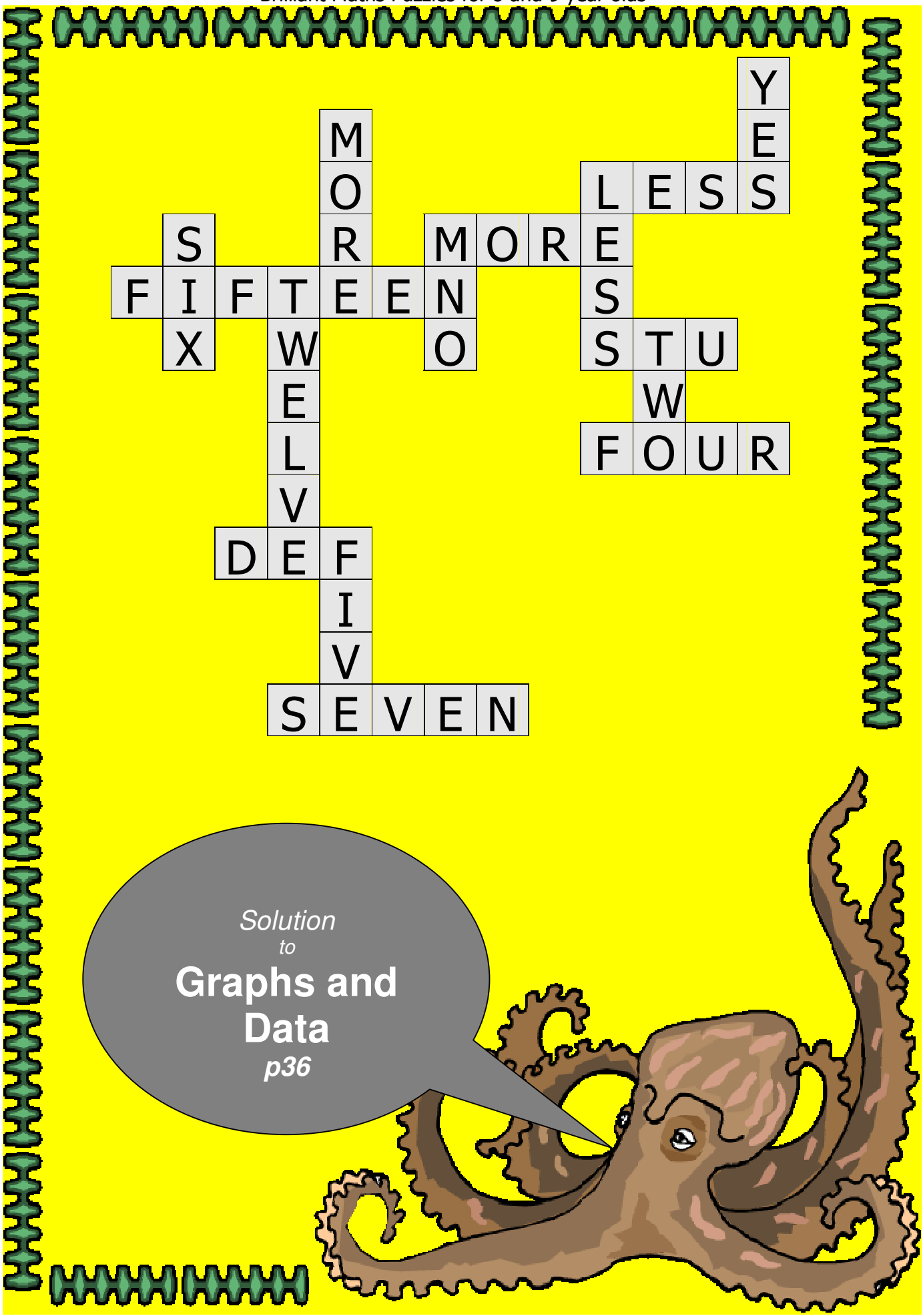
Solution to

Mass and Weight

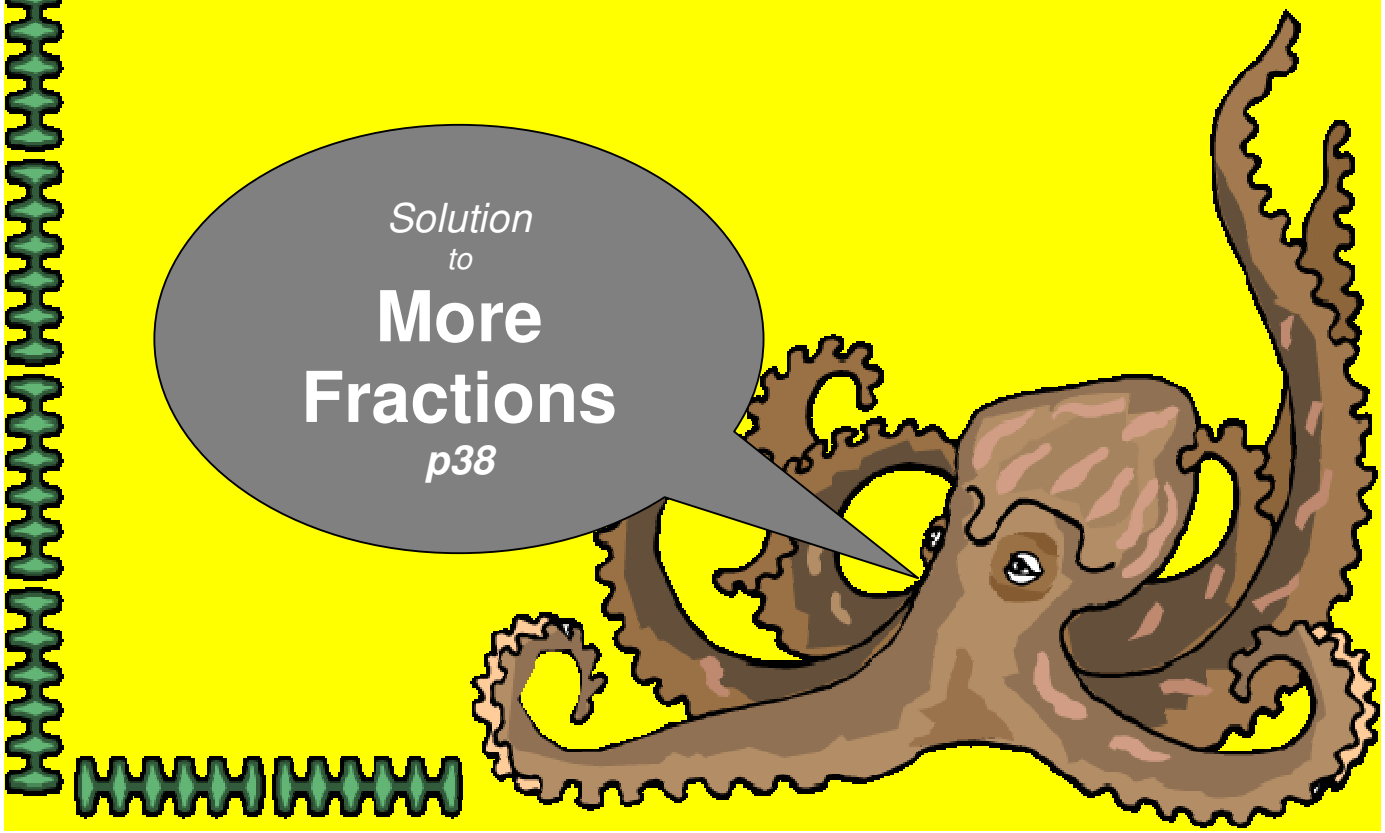
p32



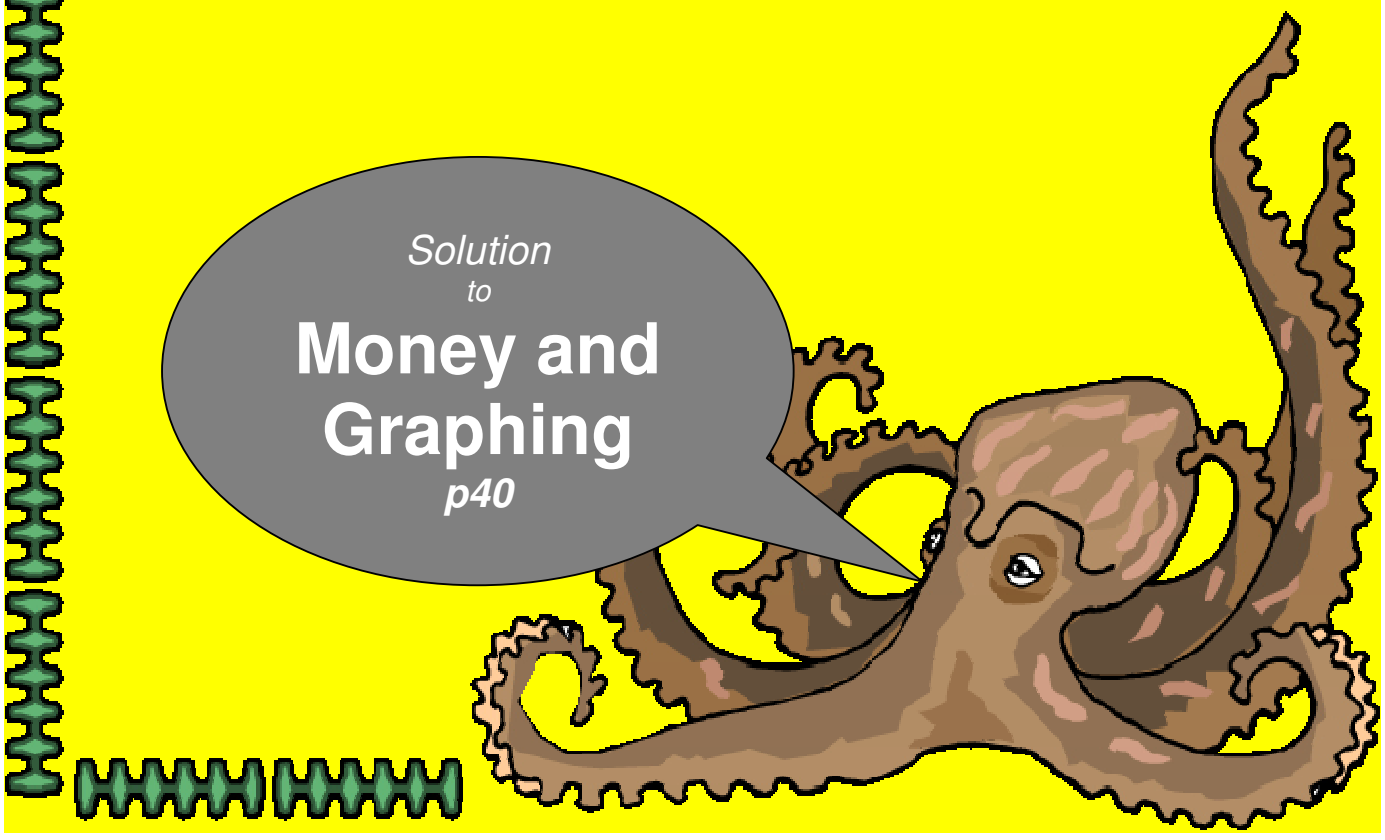

FIFTEEN
FIVE
EIGHT
EIGHT
FIVE
SIX
FOUR
TEN
FOUR
EIGHT
SEVEN
TEN
ELEVEN
SEVEN
NINE
SIX
SEVEN
SIX
TWELVE
TWELVE
TEEN
TEEN
Solution
to
Multi-operational Problems
p34


Y
E
M
O
L E S S
S
R
M O R E
F I F T E E N
S
X
W
O
S T U
E
W
L
F O U R
V
D E F
I
V
S E V E N
Solution
to
Graphs and Data
p36

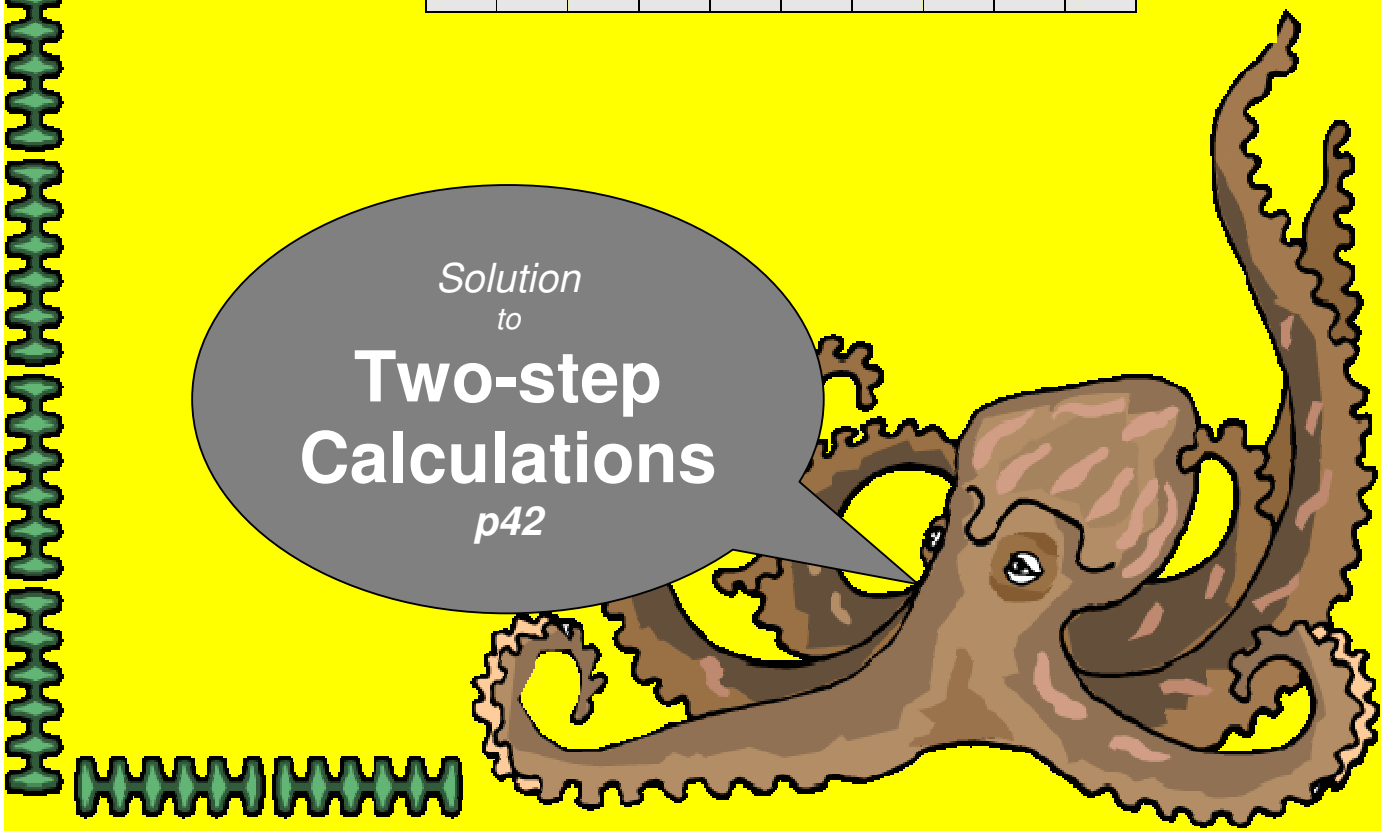
		Z		R					
	R	O	B	E	R	T			
		E		D		H	A	L	F
						I			I
	Q	U	A	R	T	E	R		O
	U				H		D		N
O	N	E		W		I		S		A
		N		H		R			O	
		T		O		D	I	A	N	A
	J	I	L	L			A		E	
		N		E	V	A	N			



				O			M					
V	E	R	O	N	I	C	A					
I				E			T					
N					S		T					
C		J	A	M	E	S			T	W	O	
E		A			V				O			
N		X			E		J		N			
T	W	O			N	A	O	M	I			
		N					A					
						O	N	E		O		
							N			N		
			S	H	E	R	A	L	E	E		

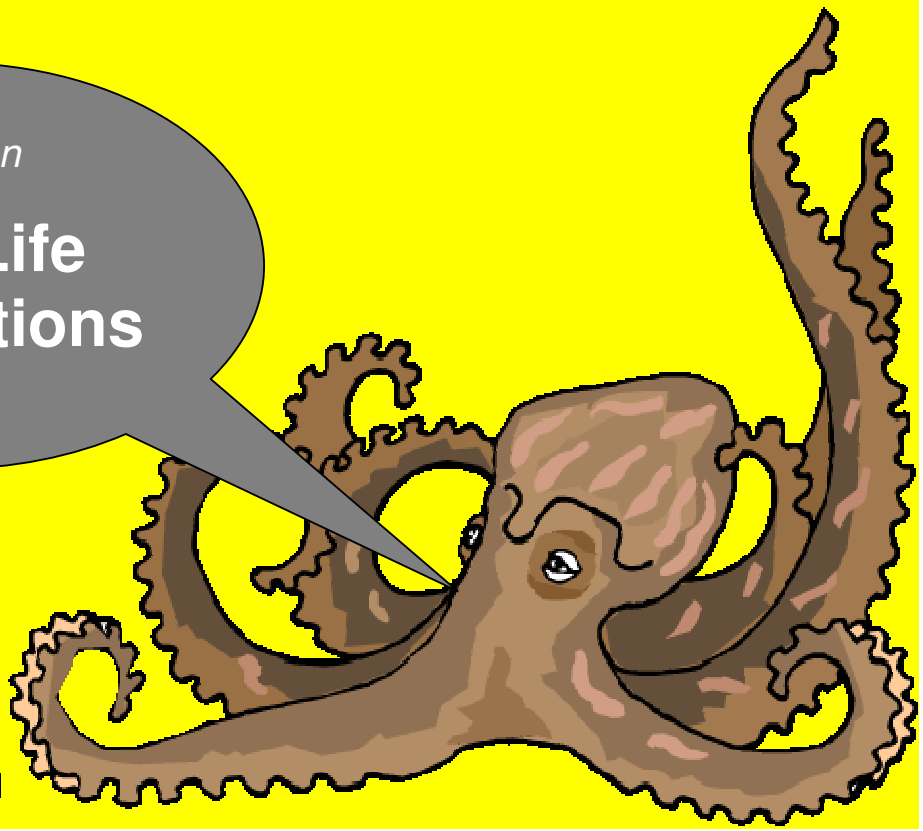


		S			O							
S	E	V	E	N	T	Y	-	T	H	R	E	E
		V			E							
		E										
		N	I	N	E	T	Y	-	F	I	V	E
		T		I					O			I
		Y		N			F	O	U	R		G
				E					R			H
				T			N					T
S	I	X	T	Y	-	E	I	G	H	T		
E							N				O	
V				N	I	N	E	T	Y	-	N	I
E				I							E	
N				N								
				E	I	G	H	T	Y	-	T	W



				F		N	I	N	E	T	E	E	N
				I		I					I		
		S	E	V	E	N					G		
		I		E		E		E	I	G	H	T	
S	I	X									T		
		T						T			E		
T	W	E	N	T	Y	-	T	H	R	E	E		
W		E		E				R			N		
E		N	I	N	E			E					
L						O	N	E					
V													
E	I	G	H	T	E	E	N						

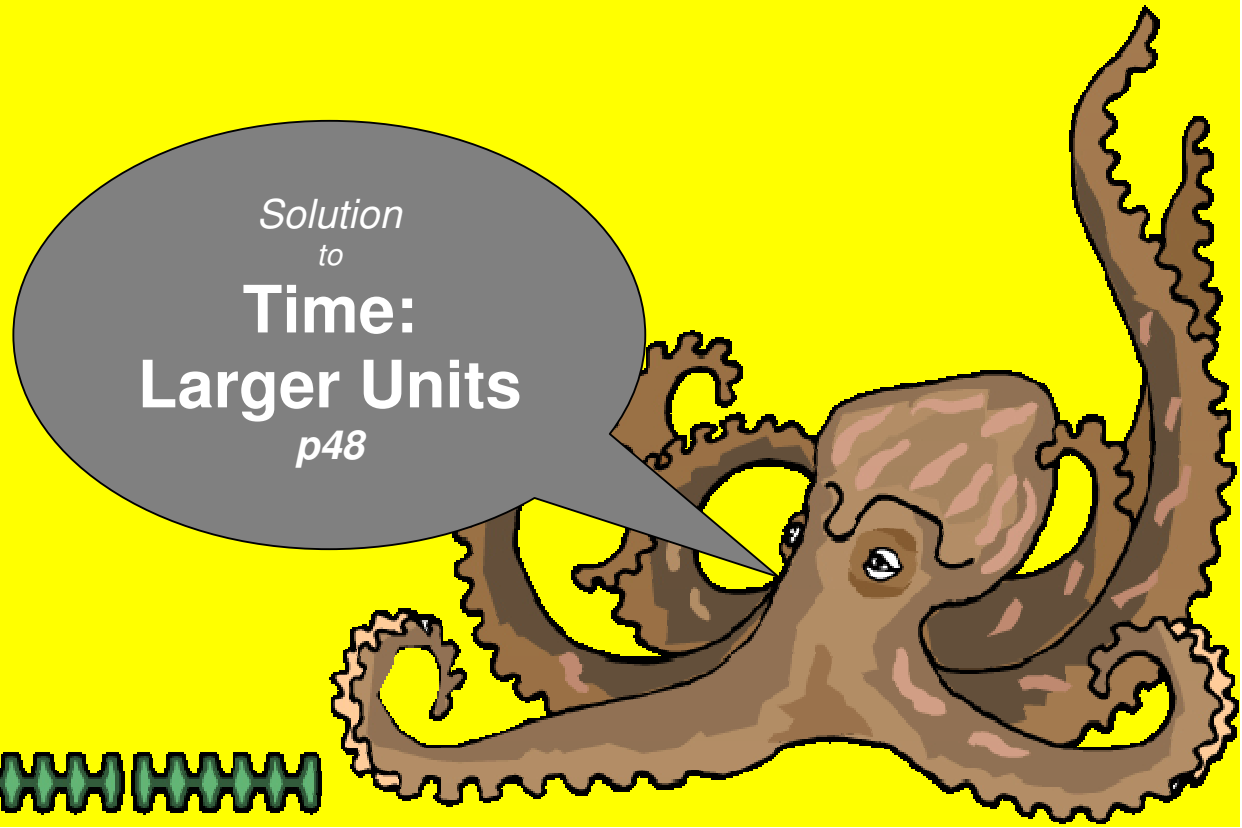
Solution
to
Real-Life Applications
p44



S	I	X	T	E	E	N				F	I	V	E	
			W							O				
T	W	E	N	T	Y	-	F	O	U	R				
W		L							R					
O		V												
		E	I	G	H	T								
						E								
		T	W	E	N	T	Y				S	I	X	
		W				W					I			
		E				O	N	E			X			
		L		F				I			T	E	N	
		V		I				G			E			
	O	N	E	V				H			E			
				E	I	G	H	T	E	E	N			

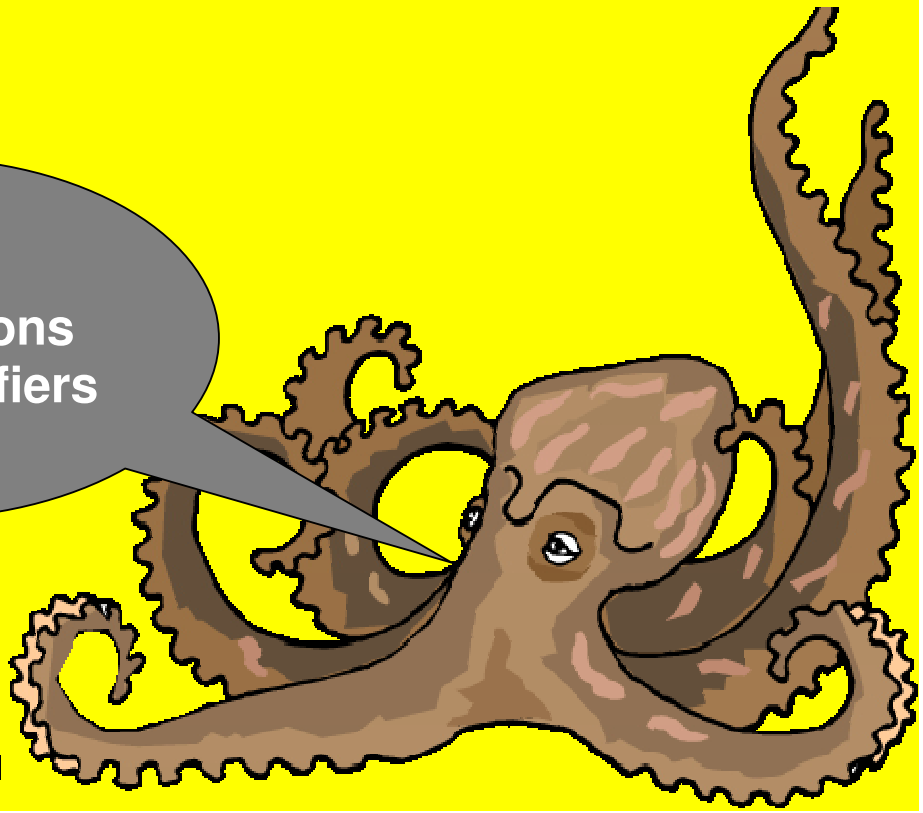
Solution
to
Doubling and Halving
p46

F	I	F	T	Y	-	T	W	O			T
				E							H
				A					F		R
H	U	N	D	R	E	D			O	N	E
A						A			U		E
L						Y	E	A	R	S	
F		W	E	E	K	S				E	
								M		V	
F						T	W	O		E	
I						W		N	I	N	E
V						O		T			
E	I	G	H	T			T	H	R	E	E



								M						
								O						
				F	U	L	L	E	S	T				
						O			T					
				L	O	W	E	R						
						E		E						
		H	I	G	H	E	R		N					
		E							N					
W	A	R	M	E	R				A			W		
	V								E	D	W	A	R	D
	I											R		
L	E	A	S	T								M		
	R									T		E		
					T		E			H		S		
				H	E	A	V	I	E	S	T			
					D		E			A				

Solution
to
Comparisons and Quantifiers
p50



							F							
						F	I	V	E			T		
							V					W		
			T	H	R	E	E					O	N	E
			W											L
		T	O	M										L
				A							V	U	L	A
				T			A		T				E	
				I			N		H				F	
				L	E	F	T		R	I	G	H	T	
				D			H		E					
				A			O	N	E					
							N							
							Y							

Solution
to
Finding Directions
p52