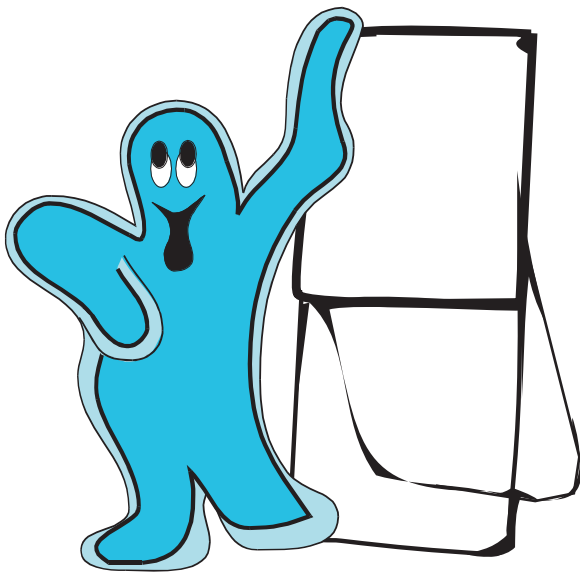
Mathematics Homework Book

Level 4

Robert Lakeland & Carl Nugent



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Whole Numbers – Solve problems involving whole numbers, including word problems

Examples

a) Calculate 48 + 57

b) Calculate 228 ÷ 24

Using the calculator we enter the problems just as they are written, i.e.

a) | 48 | + | 57 | = | which gives 105

b) | 228 | ÷ | 24 | = | which gives 9.5

Always check to see if the answer makes sense (looks roughly correct).

Evaluate the following using your calculator.

1. 278 + 392 = _____
2. 659 – 297 = _____
3. 235 x 351 = _____
4. 98 304 ÷ 256 = _____
5. 2384 + 6547 – 2391 = _____
6. 4096 ÷ 16 ÷ 8 = _____
7. 112 x 347 x 51 = _____
8. 2341 – 1969 – 253 = _____
9. 11 058 ÷ 6 ÷ 19 = _____
10. 354 x 217 x 55 = _____

Application Problems

Use your calculator to answer the following.

11. The number of students in each year level at a high school are: Year 9 – 321, Year 10 – 295, Year 11 – 282, Year 12 – 247 and Year 13 – 183. How many students attend the high school?

12. Jason earns $45 344 per year. His wife earns $38 465 per year. How much more per year does Jason earn than his wife?

How much does Jason earn per week?

13. A container holds 246 pallets of apples. Each pallet comprises 64 boxes and in each box there are 240 apples. What is the total number of apples in the container?

If on average 5 apples in every box are rotten, how many apples are rotten in a container load?

14. A truck containing 44 640 oranges arrives at a cool store to be packed. The oranges are to be packed into boxes and each box contains 12 trays with 24 oranges on each tray. How many boxes of oranges will be packed from the truck?

Evaluate each problem below using your calculator, then turn the display upside down to read each word and therefore decode the sentence.

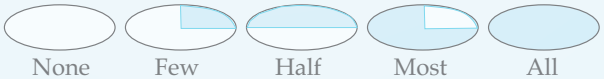
_____ (2347 + 4877 + 494) found a nest of _____ (12947 – 5869 – 1740) in a _____ (192 608 ÷ 13 ÷ 4) by the

_____ (15 469 x 5) _____ (71 x 5 x 2) tank. _____ (2315 – 845 + 1934 + 4314) never tells _____ (85 072 ÷ 32 x 2).

I found this work

Easy OK Difficult

Proportion completed



None Few Half Most All

Date: _____

Addition and Subtraction of Integers 2 – Solve problems involving integers, including word problems

Example

Calculate $^{-}2 + {}^{-}3$

Begin by replacing the two inner signs by a single sign using the **Rules for the 'Gap'** below. The 'Gap' is the space between the two numbers.

+	+	=	+
+	−	=	−
−	+	=	−
−	−	=	+

$^{-}2 + {}^{-}3 = {}^{-}2 - 3$

$= {}^{-}5$

By calculator

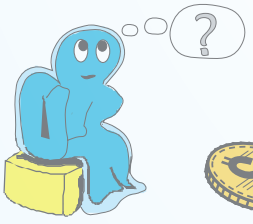
(−)	2	+	(−)	3	=

When the two inner signs are the same the single sign becomes a +.

When the two inner signs are different the single sign becomes a −.

Calculate the following integer problems using your calculator if you wish.

1. $18 + {}^{-}6 =$
2. $^{-}24 - {}^{-}19 =$
3. $43 + {}^{-}27 =$
4. $12 - {}^{-}13 =$
5. $^{-}12 + {}^{-}8 - {}^{-}5 =$
6. $^{-}30 + {}^{-}27 - {}^{-}14 =$
7. $27 + {}^{-}20 - {}^{-}17 + {}^{-}11 =$
8. $^{-}65 + {}^{-}15 - 18 - {}^{-}23 =$
9. $^{-}28 - {}^{-}47 + {}^{-}29 =$
10. $56 - {}^{-}38 + 17 + {}^{-}21 =$



Problem Solving

If seven coins add to $1, what could the coins be?

Application Problems

Write each of the following as an integer expression and then solve.

11. A farmer drilling for water on his property has reached a depth of 28 metres ($^{-}28$ m). The drill is lifted up 9 metres to clear a blockage and then drills down from this point 15 metres ($^{-}15$ m). What depth is the drill at?

12. Artifacts found by an archaeologist are dated at 240 BC ($^{-}240$). Other artifacts from another site are estimated to be 180 years older. How old are these artifacts estimated to be?

13. A diving bell is lowered to a depth of $^{-}124$ metres, i.e. 124 metres below sea level. If it rises 38 metres and then drops a further 65 metres from this point what is its new depth?

Put the numbers $^{-}4$, $^{-}3$, $^{-}2$, $^{-}1$, 0, 1, 2, 3, 4 in the magic square so that each column, row and diagonal total 0. The numbers 0 and 2 have been placed for you.

	0	
	2	

I found this work: Easy OK Difficult

Proportion completed: None Few Half Most All

Date: _____

Fractions to Decimals – Convert between fractions and decimals

Examples

a) Convert $\frac{4}{5}$ to a decimal.

b) Write 0.3 as a simplified fraction.

a) Using the calculator we enter

4	a b/c	5	=	a b/c

which gives 0.8

Alternatively we can divide the top number by the bottom number.

4	÷	5	=

which gives 0.8

b) $0.3 = \frac{0.3}{1}$ writing as a fraction of 1

$= \frac{0.3 \times 10}{1 \times 10}$ multiplying top and bottom by 10 to remove the decimal point.

$= \frac{3}{10}$

You must then check to see if it simplifies further. This can be done on your calculator by entering the fraction OR by dividing top and bottom by any common factors.

Problems

Convert the following fractions to decimals.

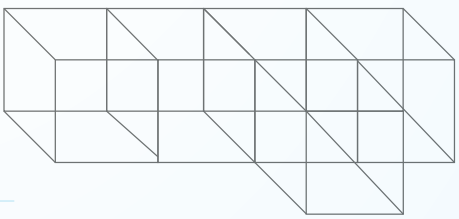
1. $\frac{1}{5} =$ _____
2. $\frac{4}{10} =$ _____
3. $\frac{3}{40} =$ _____
4. $\frac{7}{20} =$ _____
5. $\frac{3}{4} =$ _____
6. $\frac{5}{8} =$ _____

Convert the following decimals to simplified fractions.

7. 0.7 = _____
8. 0.65 = _____
9. 0.04 = _____
10. 0.6 = _____
11. 1.5 = _____
12. 0.125 = _____

Problem Solving

This steel structure was made from rods each 1.2 metres in length. What is the total length of steel required to build the structure?



Application Problems

Answer the following questions.

13. Nicola spends $\frac{3}{5}$ of her free time watching TV. What is this fraction as a decimal?

14. Edward saves $\frac{3}{8}$ of his pocket money while his friend saves 0.36 of his. Who saves the larger proportion? Justify your answer.

15. Of a shipment of cars 0.29, of them have sustained some form of damage while being transported. Sarah suggests that this is equivalent to $\frac{2}{7}$ of the cars being damaged. Do you agree with Sarah? Justify your answer.

16. Julie estimates that 0.45 of her homework is done using the computer. What is this decimal as a simplified fraction?

I found this work

Easy OK Difficult

Proportion completed

None Few Half Most All

Date: _____

Metric Units (Length and Area) – Conversion of units of distance. Problems involving length and area

milli means $\frac{1}{1000}$ part

centi means $\frac{1}{100}$ part

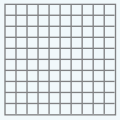
kilo means 1000 times

Abbreviations

mm = millimetre cm = centimetre
km = kilometre ha = hectare

Length
10 mm = 1 cm
100 cm = 1 m
1000 mm = 1 m
1000 m = 1 km

Area
100 mm² = 1 cm²
10 000 cm² = 1 m²
10 000 m² = 1 ha

10 mm = 1 cm  but 100 mm² = 1 cm²

Convert to the unit indicated.

1. 124 mm = _____ cm
2. 56.9 cm = _____ mm
3. 456 cm = _____ m
4. 3.24 m = _____ mm
5. 1.092 m = _____ cm
6. 12 397 m = _____ km
7. 4.23 km = _____ m
8. 4500 mm² = _____ cm²
9. 16 456 m² = _____ ha
10. 5.6 (Ha) = _____ m²

Application Problems

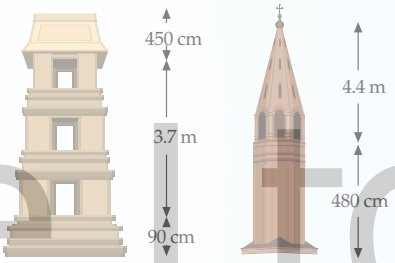
Answer the following questions.

11. If your height is 156 cm, how many metres tall are you? _____ m

12. If lamp posts are 100 m apart and you go past 74 of them (73 gaps), how far in kilometres have you travelled? _____ km

13. The heights of four friends are Peter (161 cm), Bush (156 cm), Merri (148 cm) and Angela (163 cm). Find the total length in metres if they lay down end to end. _____ m

14. Circle the taller tower. What is the difference in height?



_____

15. A rugby field requires an area of approximately 4500 m². If a school needs 4 fields, how much land in hectares should it set aside for rugby? _____ ha

16. A square farm paddock is 200 m by 200 m. How many hectares is the paddock? _____ ha

Problem Solving

Eric intends to drive from Wellington to Palmerston North, a distance of about 150 km.
His car uses 1 litre of petrol for every 12.5 km travelled.

How many litres of petrol will he use? _____

I found this work

Easy OK Difficult

Proportion completed

None Few Half Most All

Date: _____

Time Including Twenty-Four Hour Time – Conversion between 12 hour and 24 hour clock

Example

Complete the following time conversions

	am/pm	24 hour
1.	3:45 pm	
2.	midday	
3.		1745 hours

Remember that all pm times have 12 hours added to make 24 hour time.

1. 3:45 pm = (3 + 12 hours) (45 minutes)
   = 1545 hours
2. midday = 1200 hours
3. 1745 = (17 – 12) (45) and it is pm
   = 5.45 pm

Convert the following to 24 hour times.

1. 7:34 am = _____
2. 8:15 pm = _____
3. midnight = _____
4. 3:30 pm = _____
5. 12 pm = _____
6. 5 past 2 am = _____
7. 8 min. to 6 pm = _____

Convert the following 24 hour times to am/pm times.

8. 1030 hours = _____
9. 1930 hours = _____
10. 0900 hours = _____
11. 0015 hours = _____
12. 2356 hours = _____
13. 1200 hours = _____

Application Problem

Anna is going on a journey starting at 0730. She first has a 15 minute taxi ride, then a 5 hour 20 minute train ride, followed by a 45 minute bus journey and finally a 6 minute walk. When will she reach her destination?

_____

_____

_____

Application Problems

Answer the following questions.

14. A TV show starts at 1945 hours and finishes at 2150 hours. How long is the show? _____
15. A film starts at 11:15 am and finishes at 1:10 pm How long is the film? _____
16. A TV film starts at 1945 hours and lasts for 2 hours 20 minutes. When will it finish? _____
17. A TV show is 1 hour 25 minutes long and it finished at 1935 hours. When did it start? _____

A video has only got a 24 hour display. What time will it need to be set to record the following.

18. A film starts at 10:40 pm and finishes at 1 o'clock in the morning. Start _____
    End _____
19. A rugby game starts at 2:30 in the morning and lasts 2 hours. Start _____
    End _____

I found this work: Easy OK Difficult

Proportion completed: None Few Half Most All

Date: _____

Year 9 Algebra Achievement Standard

	Assessment Criteria	Explanatory Notes
ACHIEVEMENT	• Describe simple arithmetic or geometric patterns. • Plot and interpret simple graphs. • Carry out simple algebraic manipulations. • Solve simple equations.	**Assessment will be based on a selection from:** • Finding the next term in a sequence of numbers or diagrams where the pattern has a common difference or a common multiple but not a combination • Completing a table that represents a pattern • Describing a pattern in words or symbols • Interpreting simple relationships illustrated by points on a graph • Plotting co-ordinate pairs on a full Cartesian graph • Giving a simple interpretation of changes in value represented on a graph • Solving linear equations of the form b + 2 = 7 (1 step solution) • Factorising algebraic expressions such as 14x – 7 and $10x^2 + 5x$ • Combining like terms in algebraic expressions • Expanding expressions to one set of brackets • Substituting values into formula.
MERIT	• Find terms and rules for patterns. • Interpret linear graphs. • Carry out more complex algebraic manipulations. • Solve linear equations.	**Assessment will be based on a selection from:** • Giving the rule for a pattern using correct algebraic notation (not words) • Completing a table with unknowns in both columns • Relating the features of a graph to real life situations • Telling stories from graphs • Interpreting and using information about speed from a graph • Expressing a linear relationship in words and solving the resulting equation • Solving simple linear equations involving 2 or more steps • Factorising with one bracket • Substituting into formulae involving brackets, fractions, indices or multiple variables.
EXCELLENCE	• Solve algebra problems using graphs and manipulation.	**Assessment will be based on a selection from:** • Finding the rule for more complex number patterns • Justifying the rule that holds • Plotting the points on a graph for an algebraic pattern • Drawing a graph that represents changing everyday situations • Showing necessary steps and correct mathematical statements when solving equations • Interpreting answers in context.

Word Problems – Expressing a linear relationship in words and solving the resulting equation

Example

Joanne wished to purchase a pair of jeans. The price was reduced by $15.50 so Joanne pays only $41.75. Calculate the original price by using an equation.

Write the problem as an **algebraic** problem

$$\text{Cost} - 15.50 = 41.75$$

solving

$$\text{Cost} = 41.75 + 15.50$$
$$= \$57.25$$

Problems

Find the original price of the following specials.

1. A shirt was purchased for $23.70 after you obtained a discount of $13.80.

2. A stereo was purchased for $478 after the shop reduced the price by $85 in a sale.

3. A new car increases in price by $2750 and sells for $28 500. Find the original price of the car.

4. Ten CDs were purchased for $235 after the shop reduced the price by $50. Find the original price for the ten CDs.

5. Ten CDs were purchased for $235 after the shop reduced the price by $50. Find the original price of each CD.

6. A tyre company discounted a set of 4 tyres by $85 to give a sale price of $295. Find the original price of each tyre.

7. The total of two theatre tickets was $21 after one ticket received a $5 discount. What was the original price per ticket?

Problem Solving

A father and son went to a concert. The total price of their tickets was $72. If the father's ticket was twice the price of his son's, how much did they each pay?

I found this work: Easy | OK | Difficult

Proportion completed: None | Few | Half | Most | All

Date: _____

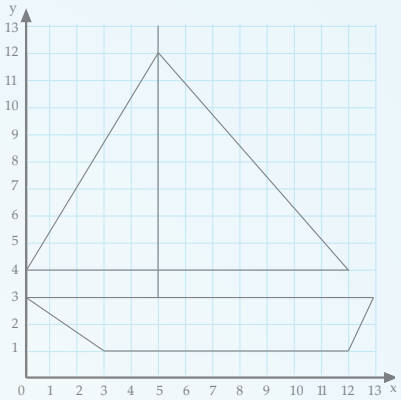
Graphing Points – Plotting co-ordinate pairs on a full Cartesian graph

Example

Graph the points on the grid and join them up in the order you plot them.

(3, 1) to (0, 3) to (5, 3) to (5, 13) to (5, 12) to (0, 4) to (12, 4) to (5, 12) to (5, 3) to (13, 3) to (12, 1) to (3, 1)

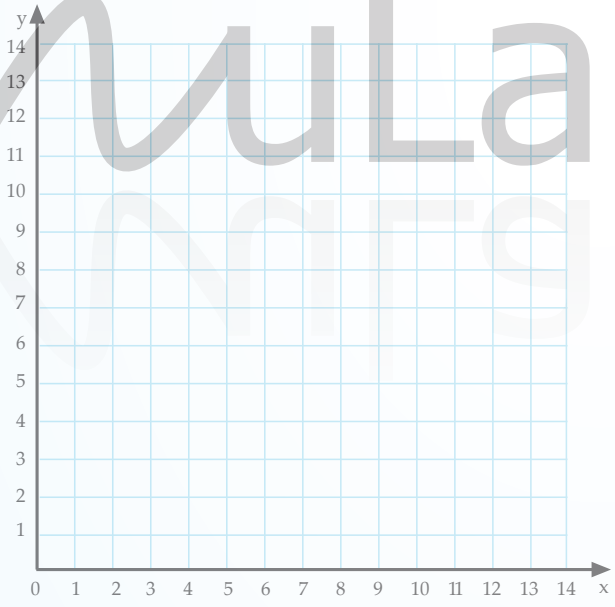
Note: We always go across first, then up or down. One way of remembering this is to remember that an aircraft always goes along before it goes up.



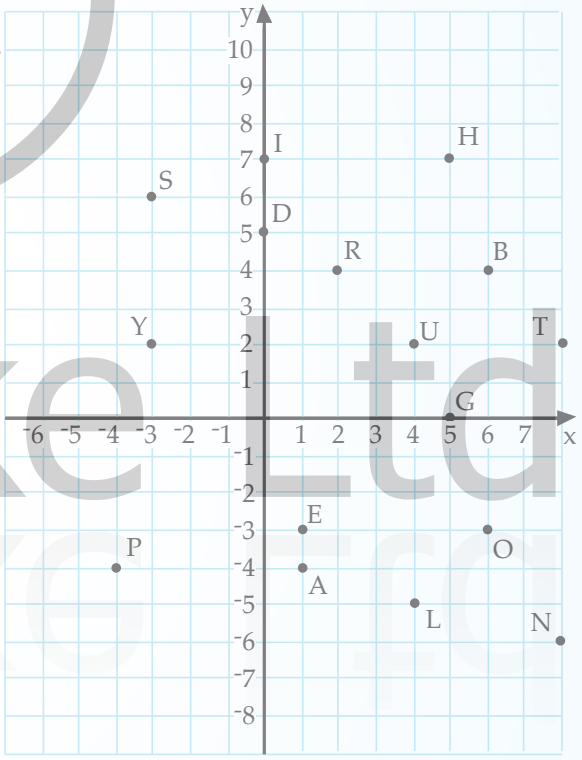
Problems

On the grid provided plot the points and join them up in the order you plot them. Lift your pencil at each 'then' and start again at the next point.

1. (7, 14) to (12, 9) to (2, 9) to (5, 12) to (5, 14) to (6, 14) to (6, 13) to (7, 14) then (11, 9) to (11, 0) to (8, 0) to (8, 3) to (6, 3) to (6, 0) to (3, 0) to (3, 9) then (4, 7) to (6, 7) to (6, 9) to (4, 9) to (4, 7) then (10, 7) to (8, 7) to (8, 9) to (10, 9) to (10, 7).



2. **Find the letter at each coordinate to decode the message below.**



(-3, 2) (6, -3) (4, 2) (1, -4) (2, 4) (1, -3) (5, 0) (6, -3) (6, -3) (0, 5)

(1, -4) (8, 2) (5, 0) (2, 4) (1, -4) (-4, -4) (5, 7) (-3, 6)

Fun Spot

What phrase does the diagram represent?

STAND

I

I found this work

Easy OK Difficult

Proportion completed

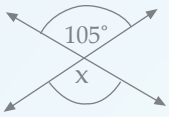
None Few Half Most All

Date: _____

Vertically Opposite Angles – Finding unknown angles

Example

Calculate the missing angle x.



Vertically opposite angles are equal

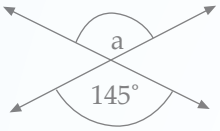
Solution

x = 105°

Problems

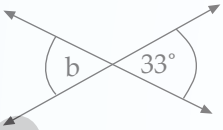
Find the value of the variable.

1.



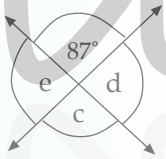
a =

2.



b =

3.

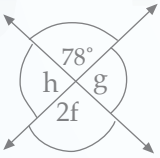


c =

d =

e =

4.

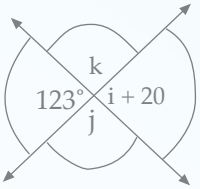


f =

g =

h =

5.

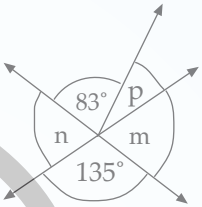


i =

j =

k =

6.



m =

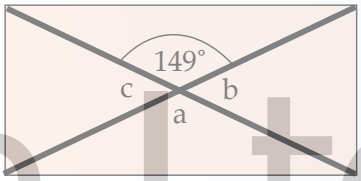
n =

p =

Application Problems

Answer the following questions.

7. The walls of a steel prefabricated building are strengthened by diagonal steel braces. Find the angles marked on the diagram of the wall section.

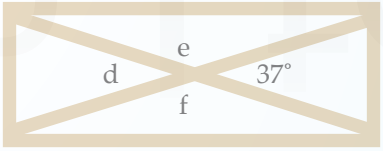


c =

d =

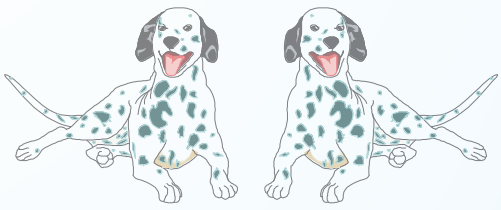
e =

8. A wooden gate has two diagonal stays. Find the angles marked at the centre of the gate.



Problem Solving

Two Dalmatian dogs are seen sitting at the edge of a lake. The total number of spots on the dogs is 87. One of the dogs has 15 more spots than the other. How many spots are there on each of the dogs?



I found this work

Easy OK Difficult

Proportion completed

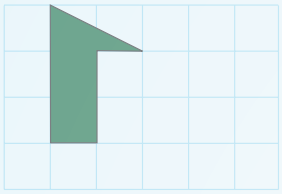
None Few Half Most All

Date:

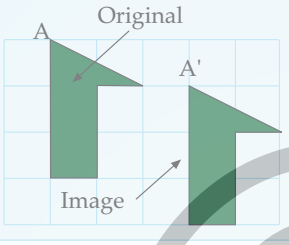
Translation – Translating objects given instructions

Example 1

Translate the figure below, 3 units to the right and 1 unit down.

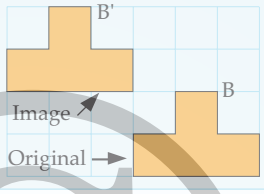


All points move in a translation.



Example 2

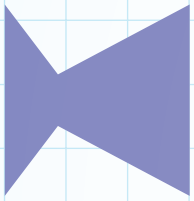
Describe the translation that maps the original to the image.



Left 3 units and up 2 units.

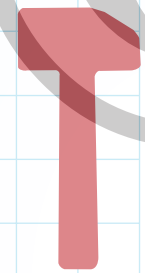
Translate each figure in the described direction.

1.



2 units to the right and 3 units down

2.



2 units to the left and 1 unit down

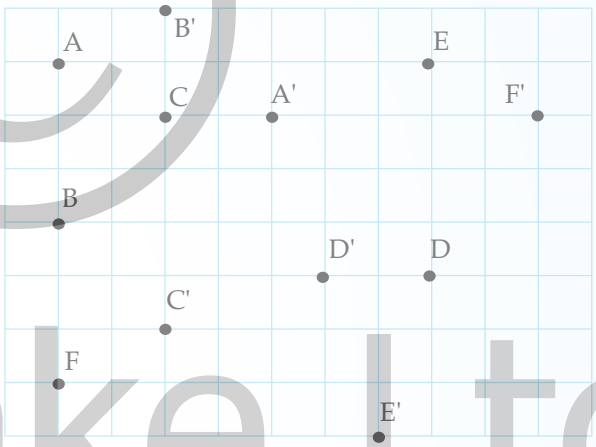
3.

4 units to the right and 3 units up

4.

1 unit to the left and 3 units up

Using the grid below describe the translation that maps each point onto its image.



5. A to A′

6. B to B′

7. C to C′

8. D to D′

9. E to E′

10. F to F′

Problem Solving

Find the perfect square that has 2 digits whose sum is an even number.

49 25 36 9 121
100 16 1 64 81 4

I found this work: Easy OK Difficult

Proportion completed: None Few Half Most All

Date: _____

Collecting Data 1 – Write a question and carry out statistical processes to explore the data collected

Application Problem

You are asked to investigate the factors which affect the selling price of Ford Falcon second-hand cars. First it is necessary to collect appropriate data. To save time the data has already been collected from such sources as newspapers, auto magazines etc. and is presented below.

Make	Model	Year	Mileage	Price	Make	Model	Year	Mileage	Price
Ford	Falcon	2003	36 000	$45 995	Ford	Falcon	1999	150 000	$11 995
Ford	Falcon	2002	50 000	$38 995	Ford	Falcon	2001	95 000	$16 995
Ford	Falcon	2003	27 000	$46 500	Ford	Falcon	2004	5 000	$46 995
Ford	Falcon	2001	68 000	$23 995	Ford	Falcon	2003	52 000	$29 995
Ford	Falcon	1999	115 000	$15 995	Ford	Falcon	1996	190 000	$12 995
Ford	Falcon	2000	131 000	$24 995	Ford	Falcon	2005	7 000	$49 995
Ford	Falcon	2000	72 000	$27 995	Ford	Falcon	2002	47 000	$21 995
Ford	Falcon	2001	108 000	$17 995	Ford	Falcon	2001	110 000	$14 995
Ford	Falcon	2004	8 000	$45 990	Ford	Falcon	2003	43 000	$38 995
Ford	Falcon	2003	41 000	$31 995	Ford	Falcon	1999	185 000	$10 995
Ford	Falcon	2001	158 000	$17 995	Ford	Falcon	2002	57 000	$19 995
Ford	Falcon	2003	24 000	$29 995	Ford	Falcon	2001	67 000	$18 995
Ford	Falcon	2002	49 000	$20 995	Ford	Falcon	2004	32 000	$41 995
Ford	Falcon	2001	61 000	$22 995	Ford	Falcon	2004	28 000	$41 995
Ford	Falcon	2003	44 000	$36 495	Ford	Falcon	2003	35 000	$31 995
Ford	Falcon	2000	72 000	$17 995	Ford	Falcon	2002	56 000	$19 995
Ford	Falcon	2002	85 000	$21 995	Ford	Falcon	2001	88 000	$20 995
Ford	Falcon	2005	12 000	$52 990	Ford	Falcon	2005	4 000	$49 995
Ford	Falcon	1996	185 000	$13 990	Ford	Falcon	2005	9 000	$49 500
Ford	Falcon	1999	152 000	$15 840	Ford	Falcon	2004	23 000	$41 995
Ford	Falcon	2001	135 000	$18 850	Ford	Falcon	2000	178 000	$15 995
Ford	Falcon	2004	15 000	$43 995	Ford	Falcon	2000	129 000	$17 995
Ford	Falcon	2003	38 000	$44 995	Ford	Falcon	2001	98 000	$19 995
Ford	Falcon	2000	68 000	$27 995	Ford	Falcon	2003	69 000	$29 995
Ford	Falcon	2001	45 000	$24 995	Ford	Falcon	2002	88 000	$18 995

Study the data carefully and write an appropriate question related to the data. Your question should be open so a good start would be: "What is the relationship between ...".

An example would be:

What is the relationship between the age of a Ford Falcon car and its selling price.

The question needs to be open and ask about similarities, differences and trends in the data. You should not have to guess at the answer. Using the data, your statistical knowledge and graphing you need to find an answer to the question and then justify that answer.

Question that you plan to answer: _____

_____

Once you have identified an appropriate question follow through the steps on the next page to begin your analysis.

I found this work

Proportion completed

Date: _____

Histograms – Displaying data appropriately and answering questions relevant to graphs

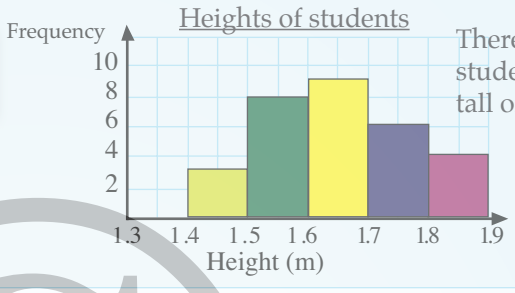
Example

Draw a histogram of the heights of students in a class, using the frequency table below.

Hgt. (m)	1.3 –	1.4 –	1.5 –	1.6 –	1.7 –	1.8 – 1.9
Frequency	0	3	8	9	6	4

How many students are 1.5 m or taller?

A histogram is used for continuous data. The rectangles touch each other and the area of the rectangle represents the frequency.



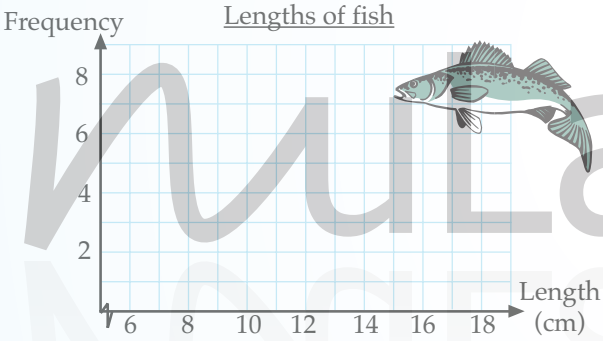
There are 27 students 1.5 m tall or taller.

Application Problems

Answer the following questions.

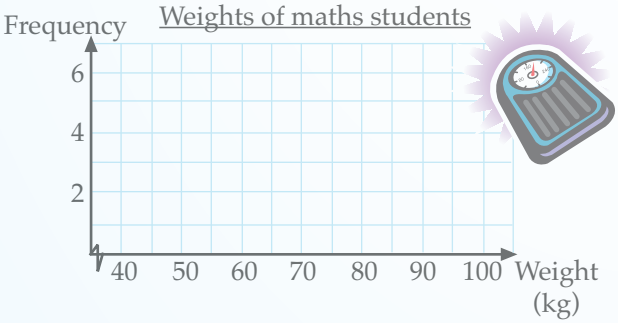
1. Draw a histogram of the lengths of fish caught from a wharf, using the frequency table below.

Lgth. (cm)	6 –	8 –	10 –	12 –	14 –	16 – 18
Freq.	1	2	7	6	1	3



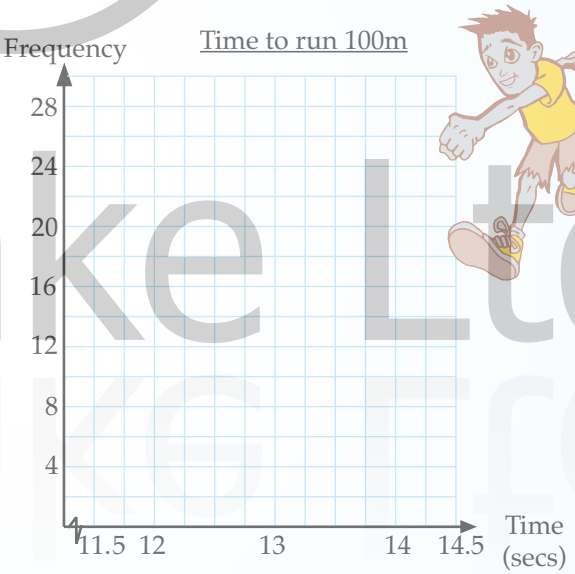
2. Draw a histogram of the weights of members of a maths class using the table below.

Wgt. (kg)	40 –	50 –	60 –	70 –	80 –	90 – 100
Freq.	3	5	4	4	2	2



3. Draw a histogram of the times for Year 9 students to run 100 metres, using the frequency table below.

Time (secs)	11.5 –	12 –	12.5 –	13 –	13.5 –	14 – 14.5
Freq.	3	14	21	28	24	10



4. How many students qualified for the final (i.e. less than 12.5 seconds)?

5. Estimate the average time for the Year 9 students to run the 100 metres.

6. How many students are there in Year 9?

I found this work: Easy OK Difficult

Proportion completed: None Few Half Most All

Date: _____

Probability Concepts – List sample space

Example

Two coins are thrown. Give all the possible outcomes (sample space) and the sample size.

Outcomes (sample space) = {HH, HT, TH, TT}

Sample size = 4

Answer the following questions.

1. A fruit bowl contains 2 apples, a pear, an orange and a banana. A single piece of fruit is taken from the bowl, list the four possible outcomes (sample space).

2. In a bag there are 7 marbles, 2 red (R), 4 green (G) and 1 blue (B).
   a) A single marble is drawn from the bag, list the three possible outcomes (sample space).
   b) Instead of drawing a single marble from the bag two marbles are drawn out. List the set of all possible outcomes (sample space) for this situation.

   RR, RG,

3. A team is made up of 3 children. List the possible outcomes (sample space) for the sex of the individuals in the team. The first two are already done.

   BBB, BBG,

   a) How many different outcomes for 3 children?
   b) How many of the outcomes include exactly 2 girls?
   c) How many of the outcomes include 1 or more boys?

4. Two dice are thrown. Complete the table of possible outcomes (sample space) below.

1st \ 2nd	1	2	3	4	5	6
1	1,1	1,2				
2						
3						
4						
5						
6						

   a) How many different outcomes for the two dice are possible?
   b) If we added the two dice together, how many of the outcomes would total 7?
   c) If we added the two dice together, how many of the outcomes would total 5 or less?

5. Theo has a disc (with an 'O' on one side and an 'X' on the other) and a coin in his pocket. He throws both in the air.
   a) Give the possible outcomes for the throw.
   b) How many possible outcomes are there altogether?
   c) If he was to repeat the throw 12 times, how many times would he expect to get a Head and an 'O'?

Problem Solving

Cut the clock face in half by drawing a line on it so that the sum of the numbers on both sides of the line are the same.

I found this work: Easy OK Difficult

Proportion completed: None Few Half Most All

Date:

Guess and Check

Example

Old McDonald had a farm.

When the tax inspector called to count his animals Old McDonald said he just had chickens and pigs. When asked how many he claimed not to know how many of each but said he had 37 mouths to feed and there were 98 feet messing up his barn.

How many chickens and pigs were on the farm?

Using **Guess and Check**.

We know there are 37 animals and 98 feet.

20 chickens and 17 pigs $= 20 \times 2 + 17 \times 4$
$= 108$ too big

30 chickens and 7 pigs $= 30 \times 2 + 7 \times 4$
$= 88$ too small

25 chickens and 12 pigs $= 25 \times 2 + 12 \times 4$
$= 98$ just right

So the answer is 25 chickens and 12 pigs.

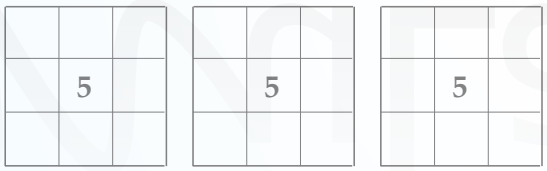
Use Guess and Check to solve the following problems.

1. Use the digits 1 9 9 8 in this order and by inserting the operations (+, – and or x) in any order between pairs of digits, complete the sum so it equals 81.

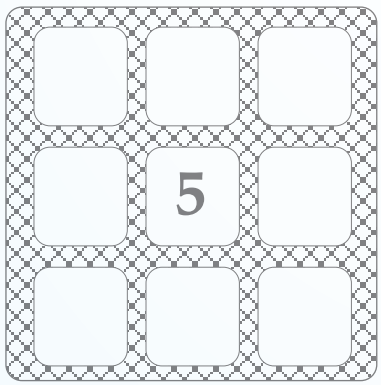
Guesses	Check
1 9 9 8	
1 9 9 8	
1 9 9 8	
1 9 9 8	

2. Complete the magic square so each row, column and diagonal add to 15 using all the numbers 1 to 9 only. The number 5 is in the middle.

Guesses



Answer



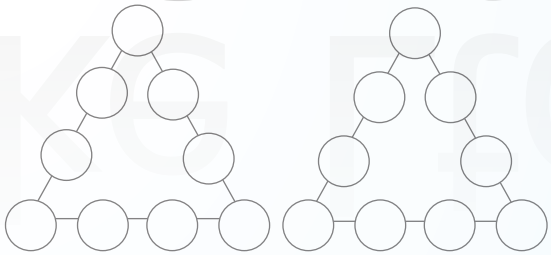
3. What number is Peter thinking of ? When he doubles it and adds 49 the result is 111.

Peter's number is = _____

4. Use the digits 2, 3 and 6 to make a 3 digit prime number.

3 digit prime number = _____

5. Place the numbers 1 to 9 in the circles so that each side of the triangle adds to 20.



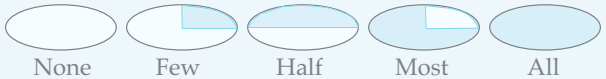
6. On my calculator I divided a number by 3 instead of multiplying by 3. The answer I get is 24 less than it should be. What is the original number (try numbers on your calculator)?

The original number is = _____

I found this work

Easy OK Difficult

Proportion completed



None Few Half Most All

Date: _____

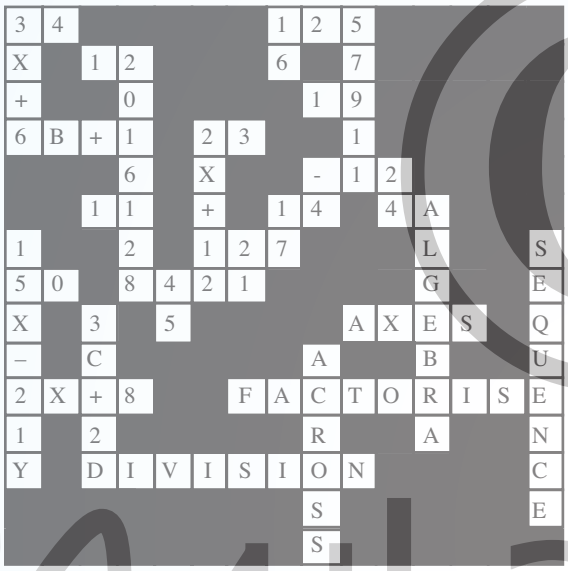
Page 62 Factorising Linear Expressions

1. 2(x + 3)
2. 3(x + 5)
3. 2(y – 2)
4. 5(k – 1)
5. 7(x + 3)
6. 3(u + 2)
7. 5(3x – 4)
8. 2(x + 9)
9. 6(y – 8)
10. 2(x + 1)
11. 5(x – 4)
12. 2(z + 1)
13. 6(y + 6)
14. 2(x + y)
15. 5(3x – 4)
16. 2(2x + 9)
17. 6(7y – 8)
18. 2(3x + 1)
19. 2(4x + 3)
20. 15(x – 2)

Problem Solving

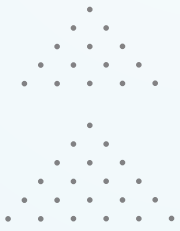
At 20 cheques you would have originally paid $4.40 per month and now will pay $4.40. More than 20 cheques it is true and less than 20 it is more expensive.

Page 63 Algebra Crossmaths

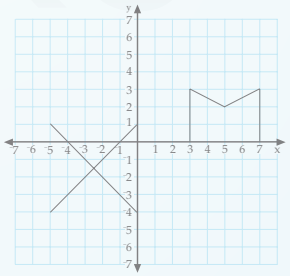


Page 64 Algebra Review 2

1. 7x + 15
2. 7x + 5
3. 12A + 11
4. 4x – 9
5. x^5
6. y^5
7. x (or x^1)
8. 125
9. 243
10. 3x + 15
11. 4y – 8
12. 6z + 15
13. 4(x + 5)
14. 3(4z – 1)
15. 3(5y + 2)
16. 32, 38
17. 96, 192
18.



19. 9, 11, 13
20. 5, 2, -1
21. 3, 6, 10
22.



23. and 24.