

# Emerging ANSWERS

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# N1a Place Value - Integers Answers

- 1) Put the following numbers in the place value table.

a) 2415	1000 Thousands	100 Hundreds	10 Tens	1 Units
b) 607				
c) 9380	2	4	1	5
d) 2004		6	0	7
	9	3	8	0
	2	0	0	4

- 2) Write the following numbers in figures.

- a) six hundred and sixty seven **667**  
b) two thousand one hundred and fifty six **2156**  
c) nine hundred and fourteen **914**  
d) four thousand and seventy one **4071**

- 3) Write the following numbers in words.

- a) 5432 **five thousand four hundred and thirty two**  
b) 811 **eight hundred and eleven**  
c) 3620 **three thousand six hundred and twenty**  
d) 9090 **nine thousand and ninety**

- 4) a) What is the value of the 2 in the

number 1250? **200**

- b) What is the value of the 6 in the

number 6924? **6000**

# N1a Place Value - Integers Answers

- 1) Match the words with the correct numbers.

twenty seven	2007
two hundred and seven	27
two thousand and seven	2070
two thousand and seventy	207

- 2) Here are four number cards.

4

6

3

1

- a) What is the **biggest three digit number** you can make with these cards?

6 4 3

- b) What is the **biggest even number** you can make with all four cards?

6 3 1 4

- 3) a) Write a whole number that is bigger than **one thousand** but smaller than **one thousand one hundred**. anything from 1001 to 1099
- b) Write the number **eleven thousand eleven hundred and eleven**. 12111

# N1b Place Value - Decimals

## Answers

1) Put the following numbers in the place value table:

- a) 7.24
- b) 30.036
- c) 209.107
- d) 5034.005

Thousands	Hundreds	Tens	Units	.	Tenths	Hundredths	Thousandths
5	2 0	3 0	7 0 9 4	.	2 0 1 0	4 3 0 0	6 7 5

2) Write the following numbers in figures:

- a) Eight point two four 8.24
- b) Fifty point zero two five 50.025
- c) Three hundred and six point two 306.2
- d) Two thousand, five hundred and forty point zero seven 2540.07

3) Write the following numbers in words:

- a) 7.5 Seven point five
- b) 80.26 Eighty point two six
- c) 930.074 Nine hundred and thirty point zero seven four
- d) 1402.306 One thousand four hundred and two point three zero six

- 4) a) What is the value of the 4 in the number 72.46? Four tenths  
 b) What is the value of the 5 in the number 8.205? Five thousandths

# N1c Place Value - Measures Answers

m	cm	mm

- 1) Use the place value table to convert
- 2571 mm to cm **257.1 cm**
  - 7 cm to mm **70 mm**
  - 4 m to cm **400 cm**
  - 324 mm to m **0.324 m**
  - 8 cm to m **0.08 m**

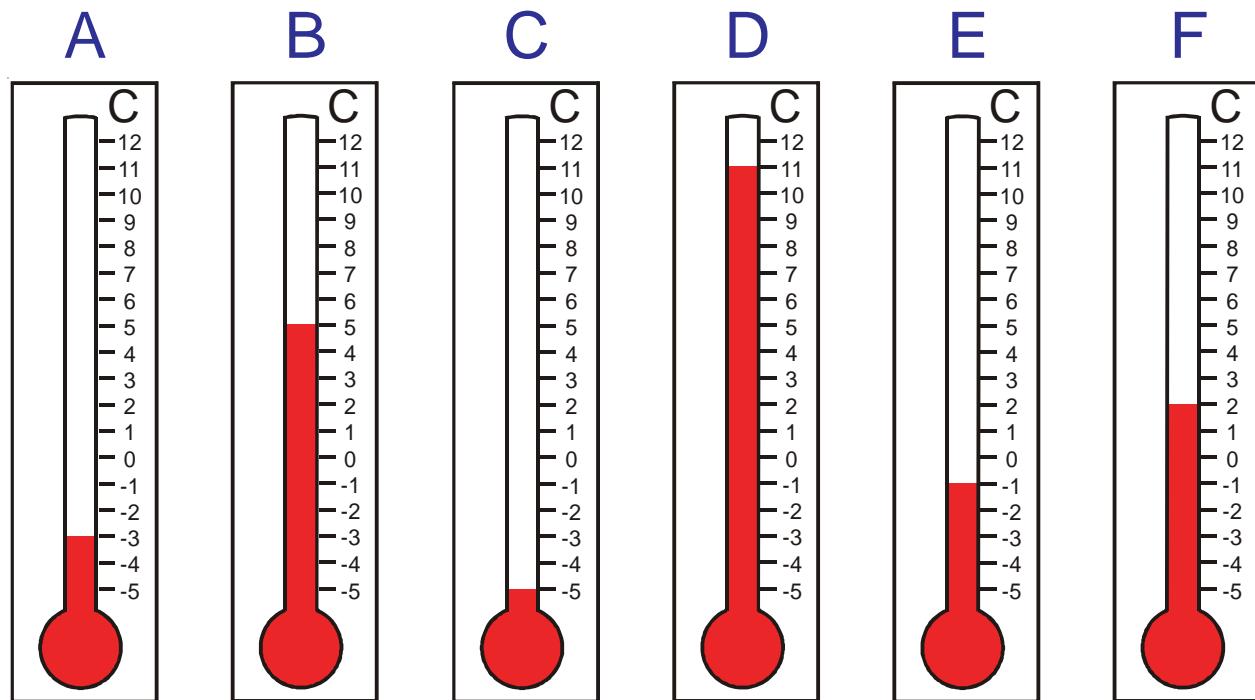
L		mL

- 2) Use the place value table to convert
- 4052 ml to L **4.052 L**
  - 596 mL to L **0.596 L**
  - 7 L to mL **7000 mL**
  - 8.4 L to mL **8400 mL**
  - 9.03 L to mL **9030 mL**

# N2a

## Ordering Numbers - Integers

### Answers



The thermometers A to F show the temperature at 3:00 A.M. in six different cities.

Use them to fill in the table below.

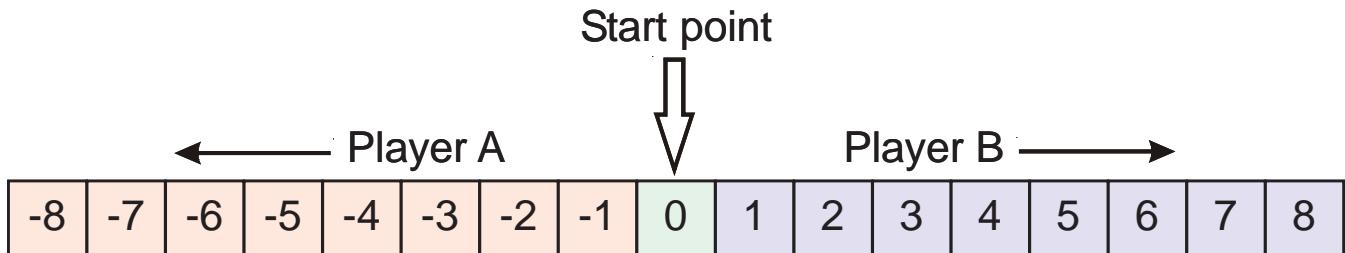
*The first one has been done for you.*

Thermometer	Temperature at 3.00 A.M.	Temperature change over next five hours	Temperature at 8.00 A.M.
A	-3 °C	rises 8 °C	5 °C
B	5 °C	falls 6 °C	-1 °C
C	-5 °C	rises 3 °C	-2 °C
D	11 °C	falls 15 °C	-4 °C
E	-1 °C	rises 8.5 °C	7.5 °C
F	2 °C	falls 6.5 °C	-4.5 °C

1) Place these numbers in order of size, smallest to largest.

- a) -1, 2, 5, 6
- b) -5, -2, 3, 4, 7
- c) -4, -2, -1, 0, 3, 9
- d) -9, -6, -4, -3, 1, 4, 8
- e) -12, -10, -8, -7, -6, -4, -3
- f) -5.5, -4, -3.5, -3, -2.5, 6, 7.5, 8.5

2) a) What is special about the temperature 100 °C? Water boils  
b) What is special about the temperature 0 °C? Water freezes



3) Place a counter on 0.

Player A and B take turns in rolling a dice.

Whatever scores player A gets, he/she always moves this many squares to the left.

Whatever scores player B gets, he/she always moves this many squares to the right.

Player A wins if he/she needs to move to a square which is less than -8.

Player B wins if he/she needs to move to a square which is more than 8.

- 1) a) 0.47      b) 0.407      c) 7.04      d) 47.4  
J                C                E                G

From the following list, match the correct way of reading each of the above numbers.

- |                               |                           |
|-------------------------------|---------------------------|
| A- seven point four           | F- seven zero four        |
| B- zero point forty seven     | G- forty seven point four |
| C- zero point four zero seven | H- four seven four        |
| D- four seven point four      | I- four seven point zero  |
| E- seven point zero four      | J- zero point four seven  |

- 2) Arrange the numbers in order of size, starting with the smallest.

- a) 1.8      0.8      8      8.1  
0.8      1.8      8      8.1
- b) 0.08      1.16      0.12      1.09  
0.08      0.12      1.09      1.16
- c) £4.04      £4.40      £4.14      £0.41  
£0.41      £4.04      £4.14      £4.40
- d) 3.11      3.1      3      3.011      3.001  
3      3.001      3.011      3.1      3.11
- e) 0.2      0.022      0.202      0.222      0.22  
0.022      0.2      0.202      0.22      0.222
- f) 6.06      60.06      6.606      66.06      6.066  
6.06      6.066      6.606      60.06      66.06

- 1) Here are some number cards.



Each card can be used once, all cards must be used,  
the decimal point card cannot be at the end of a number.

- a) What is the smallest number you can make?



- b) What is the largest number you can make?



- 2) The times, in seconds, for the seven runners in a 100m race were:

**9.96 10.03 9.92 10.26 10.37 9.99 10.00**

What was the time of the winner? **9.92**

- 3) I am a decimal number.

I have two figures before the decimal point and two figures after the decimal point.

I read the same forwards as backwards.

I have no zeros.

My first digit is bigger than my second digit.

The sum of my digits is 8.

**What number am I?** **31.13**

For each set of questions, time how long it takes to get the answers.

You must work out the answers in your head - *you can't do any working on paper.*

### Set A

- 1)  $23 + 35 = 58$
- 2)  $17 + 13 = 30$
- 3)  $45 + 46 = 91$
- 4)  $38 + 44 = 82$
- 5)  $71 + 54 = 125$
- 6)  $38 + 46 = 84$
- 7)  $27 + 68 = 95$
- 8)  $64 + 77 = 141$
- 9)  $64 + 99 = 163$
- 10)  $87 + 96 = 183$

### Set B

- 1)  $42 + 56 = 98$
- 2)  $23 + 56 = 79$
- 3)  $37 + 25 = 62$
- 4)  $68 + 26 = 94$
- 5)  $83 + 65 = 148$
- 6)  $59 + 37 = 96$
- 7)  $42 + 39 = 81$
- 8)  $57 + 68 = 125$
- 9)  $99 + 48 = 147$
- 10)  $68 + 94 = 162$

### Set C

- 1)  $62 + 24 = 86$
- 2)  $38 + 22 = 60$
- 3)  $17 + 34 = 51$
- 4)  $52 + 29 = 81$
- 5)  $82 + 63 = 145$
- 6)  $28 + 36 = 64$
- 7)  $88 + 17 = 105$
- 8)  $67 + 56 = 123$
- 9)  $42 + 98 = 140$
- 10)  $78 + 93 = 171$

*For any set of questions:*

- |                      |                            |
|----------------------|----------------------------|
| 45 seconds or less:  | Maths teacher standard     |
| 46 to 89 seconds:    | Extremely fast             |
| 90 to 149 seconds:   | Fast                       |
| 150 to 209 seconds:  | Reasonable                 |
| 210 seconds or more: | A bit more practise needed |

*How do you win every time?*

You probably noticed that if you can get to 18 you definitely win.

But, if you get to 15 you can definitely get to 18 and so 15 is a step on the way to victory.

And if you get to 12 you can get to 15.

To cut a long story short, just stick to the 3 times table (or get on to it as soon as you can if you go first.)

So, if you go second, your numbers will always be:  
3, 6, 9, 12, 15, 18, 21.

If you go first, start with a 1 or 2 and keep playing until you can say, 6, 9, 12, etc.

$$1) \ 51 + 36 = \underline{87}$$

$$2) \ 41 + 27 = \underline{68}$$

$$3) \ 231 + 25 = \underline{256}$$

$$4) \ 446 + 38 = \underline{484}$$

$$5) \ 569 + 84 = \underline{653}$$

$$6) \ 316 + 262 = \underline{578}$$

$$7) \ 596 + 472 = \underline{1068}$$

$$8) \ 657 + 847 = \underline{1504}$$

$$9) \ 62 + 38 + 517 = \underline{617}$$

$$10) \ 216 + 32 + 518 + 74 = \underline{840}$$

# N3b

## Adding Integers - Written Method

### Answers

$$\begin{array}{r} 1) \quad 2 \ 3 \\ + 4 \ 5 \\ \hline 6 \ 8 \end{array}$$

$$\begin{array}{r} 2) \quad 5 \ 8 \\ + 2 \ 6 \\ \hline 8 \ 4 \end{array}$$

Work out what  
the **\*** must be.

$$\begin{array}{r} 3) \quad 7 \ 9 \\ + 4 \ 8 \\ \hline 1 \ 2 \ 7 \end{array}$$

$$\begin{array}{r} 4) \quad 7 \ 3 \\ + 8 \ 7 \\ \hline 1 \ 6 \ 0 \end{array}$$

$$\begin{array}{r} 5) \quad 9 \ 4 \\ + 9 \ 8 \\ \hline 1 \ 9 \ 2 \end{array}$$

$$\begin{array}{r} 6) \quad 2 \ 6 \ 6 \\ + 3 \ 5 \ 2 \\ \hline 6 \ 1 \ 8 \end{array}$$

$$\begin{array}{r} 7) \quad 4 \ 8 \ 7 \\ + 2 \ 6 \ 4 \\ \hline 7 \ 5 \ 1 \end{array}$$

$$\begin{array}{r} 8) \quad 8 \ 6 \ 7 \\ + 4 \ 9 \ 6 \\ \hline 1 \ 3 \ 6 \ 3 \end{array}$$

# N4a

## Subtracting Integers - Mentally Answers

For each set of questions, time how long it takes to get the answers.

You must work out the answers in your head - *you can't do any working on paper.*

### Set A

1)  $75 - 71 = 4$

2)  $98 - 93 = 5$

3)  $84 - 32 = 52$

4)  $68 - 24 = 44$

5)  $79 - 47 = 32$

6)  $38 - 29 = 9$

7)  $67 - 48 = 19$

8)  $54 - 39 = 15$

9)  $94 - 36 = 58$

10)  $72 - 25 = 47$

### Set B

1)  $57 - 52 = 5$

2)  $78 - 71 = 7$

3)  $56 - 13 = 43$

4)  $78 - 27 = 51$

5)  $66 - 31 = 35$

6)  $84 - 38 = 46$

7)  $76 - 29 = 47$

8)  $43 - 17 = 26$

9)  $62 - 26 = 36$

10)  $51 - 24 = 27$

### Set C

1)  $39 - 34 = 5$

2)  $67 - 62 = 5$

3)  $83 - 42 = 41$

4)  $88 - 34 = 54$

5)  $76 - 25 = 51$

6)  $63 - 39 = 24$

7)  $46 - 28 = 18$

8)  $54 - 48 = 6$

9)  $72 - 27 = 45$

10)  $72 - 38 = 34$

*For any set of questions:*

45 seconds or less: Maths teacher standard

46 to 89 seconds: Extremely fast

90 to 149 seconds: Fast

150 to 209 seconds: Reasonable

210 seconds or more: A bit more practise needed

# N4a

## Subtracting Integers - Mentally

### Answers

This trick works by itself.  
On the piece of paper you must always  
write the number **1089**.  
This number will always be the answer.  
Here are some examples to show you.

$$\begin{array}{r} 412 \\ -214 \\ \hline 198 \\ +891 \\ \hline 1089 \end{array}$$

$$\begin{array}{r} 913 \\ -319 \\ \hline 594 \\ +495 \\ \hline 1089 \end{array}$$

$$\begin{array}{r} 784 \\ -487 \\ \hline 297 \\ +792 \\ \hline 1089 \end{array}$$

$$\begin{array}{r} 543 \\ -345 \\ \hline 198 \\ +891 \\ \hline 1089 \end{array}$$

$$\begin{array}{r} 978 \\ -879 \\ \hline 099 \\ +990 \\ \hline 1089 \end{array}$$

$$\begin{array}{r} 310 \\ -013 \\ \hline 297 \\ +792 \\ \hline 1089 \end{array}$$

$$1) \ 35 - 12 = \underline{\hspace{2cm}} \quad 23$$

$$2) \ 58 - 27 = \underline{\hspace{2cm}} \quad 31$$

$$3) \ 93 - 46 = \underline{\hspace{2cm}} \quad 47$$

$$4) \ 258 - 37 = \underline{\hspace{2cm}} \quad 221$$

$$5) \ 681 - 79 = \underline{\hspace{2cm}} \quad 602$$

$$6) \ 420 - 68 = \underline{\hspace{2cm}} \quad 352$$

$$7) \ 743 - 471 = \underline{\hspace{2cm}} \quad 272$$

$$8) \ 361 - 278 = \underline{\hspace{2cm}} \quad 83$$

$$9) \ 800 - 692 = \underline{\hspace{2cm}} \quad 108$$

$$10) \ 1450 - 785 = \underline{\hspace{2cm}} \quad 665$$

1) 4 5

$$\begin{array}{r} - \\ \underline{2\ 3} \\ \hline 2\ 2 \end{array}$$

2) 7 9

$$\begin{array}{r} - \\ \underline{4\ 5} \\ \hline 3\ 4 \end{array}$$

3) 6 7

$$\begin{array}{r} - \\ \underline{2\ 6} \\ \hline 4\ 1 \end{array}$$

4) 8 6

$$\begin{array}{r} - \\ \underline{6\ 1} \\ \hline 2\ 5 \end{array}$$

5) 6 3

$$\begin{array}{r} - \\ \underline{4\ 7} \\ \hline 1\ 6 \end{array}$$

6) 3 4 5

$$\begin{array}{r} - \\ \underline{2\ 6\ 3} \\ \hline 8\ 2 \end{array}$$

7) 9 2 8

$$\begin{array}{r} - \\ \underline{3\ 6\ 3} \\ \hline 5\ 6\ 5 \end{array}$$

8) 7 8 3

$$\begin{array}{r} - \\ \underline{5\ 9\ 6} \\ \hline 1\ 8\ 7 \end{array}$$

# N5

## Multiplication by 2, 3, 4, 5, and 10 *Answers*

1) Fill in the missing numbers in the minitable below.

a)

$\times$	10	4	5	3
3	30	12	15	9
2	20	8	10	6
1	10	4	5	3
5	50	20	25	15

b)

$\times$	5	3	4	2
2	10	6	8	4
4	20	12	16	8
10	50	30	40	20
3	15	9	12	6

2) Work out

a)  $2 \times 17 = \underline{34}$       b)  $24 \times 5 = \underline{120}$

c)  $10 \times 9 = \underline{90}$       d)  $4 \times 62 = \underline{248}$

e)  $37 \times 3 = \underline{111}$       f)  $2 \times 81 = \underline{162}$

g)  $5 \times 32 = \underline{160}$       h)  $3 \times 19 = \underline{57}$

i)  $26 \times 4 = \underline{104}$       j)  $11 \times 10 = \underline{110}$

# N5

## Multiplication by 2, 3, 4, 5, and 10 Answers

- 1) a) Use the table to fill in the gaps below.

$$21 \times 14 = \underline{294}$$

$$12 \times \underline{19} = 228$$

$$\underline{21} \times 15 = 315$$

$$286 \div 22 = \underline{13}$$

$\times$	11	12	13	14	15
18	198	216	234	252	270
19	209	228	247	266	285
20	220	240	260	280	300
21	231	252	273	294	315
22	242	264	286	308	330

- b) Give two different pairs of numbers.

$$\underline{12} \times \underline{21} = 252$$

$$\underline{14} \times \underline{18} = 252$$

- 2) Julia says:

*“Multiply any number by five.  
The answer must be an odd number.”*

Is she correct?

Circle Yes or No

Yes /  No

Explain how you know.

Any example which shows this is wrong such as:

$2 \times 5 = 10$  and 10 is an even number.

# N6

Division by 2, 3, 4,  
5, and 10  
*Answers*

1) Work out

a)  $16 \div 2 = \underline{\text{8}}$       b)  $30 \div 5 = \underline{\text{6}}$

c)  $21 \div 3 = \underline{\text{7}}$       d)  $40 \div 4 = \underline{\text{10}}$

e)  $35 \div \underline{\text{5}} = 7$       f)  $24 \div \underline{\text{3}} = 8$

2) Work out

a)  $46 \div 2 = \underline{\text{23}}$       b)  $39 \div 3 = \underline{\text{13}}$

c)  $65 \div 5 = \underline{\text{13}}$       d)  $62 \div 4 = \underline{\text{15 r2}}$

e)  $47 \div 3 = \underline{\text{15 r2}}$       f)  $11 \div 10 = \underline{\text{1 r1}}$

g)  $92 \div 4 = \underline{\text{23}}$       h)  $57 \div 3 = \underline{\text{19}}$

i)  $90 \div 5 = \underline{\text{18}}$       j)  $83 \div 10 = \underline{\text{8 r3}}$

# N6

## Division by 2, 3, 4, 5, and 10 Answers

1) Here is part of the 45 times table.

Use the table to help you fill in  
the missing numbers.

a)  $315 \div 7 = \underline{45}$

b)  $135 \div 45 = \underline{3}$

c)  $270 \div \underline{6} = 45$

d)  $\underline{9} \times 45 = 405$

e)  $495 \div 45 = \underline{11}$

f)  $\underline{20} \times 45 = 900$

g)  $450 \div 30 = \underline{15}$

$1 \times 45$	=	45
$2 \times 45$	=	90
$3 \times 45$	=	135
$4 \times 45$	=	180
$5 \times 45$	=	225
$6 \times 45$	=	270
$7 \times 45$	=	315
$8 \times 45$	=	360
$9 \times 45$	=	405
$10 \times 45$	=	450

2) Joe says:

*“Divide any number by three.  
The answer must be an even number.”*

Is he correct?

Circle Yes or No

Yes /  No

Explain how you know.

15 ÷ 3 = 5 and 5 is an odd number.

# N7a Units Length, Mass and Capacity Answers

- 1) a) How many millimetres are in a centimetre? 10
- b) How many centimetres are in a metre? 100
- c) How many metres are in a kilometre? 1000
- d) Work out how many millimetres are in a metre. 1000
  
- 2) How many grams are in three kilograms? 3000
  
- 3) How many millilitres are in a five litres? 5000
  
- 4) In the table, work out what each item should be measured in.  
Your choices are mm, cm, m, km, g, kg, ml or l.

Amount of lemonade in a bottle	ml or l
Mass of a lemonade bottle	g or kg
Width of a lemonade bottle	mm or cm
Distance to the moon	km
Mass of a wasp	g
Length of a wasp	mm
Amount of blood in a human body	l

# N7a

## Length, Mass and Capacity Answers

1) Try to match up A to F with U to Z

A	Mass of the Earth	Y	5 980 000 000 000 000 000 000 kg
B	Capacity of all water on Earth	U	1460 000 000 000 000 000 000 litres
C	Length of airways in the lungs laid end-to-end	V	2 400 km
D	Average capacity of air breathed in a day	Z	11 000 litres
E	Mass of Mount Everest	W	3 041 409 000 000 000 kg
F	Blood vessels in a human body laid end-to-end	X	100 000 km



2) The ship is in a harbour.

There are ten rungs visible on the ship's ladder and they are 30 cm apart.

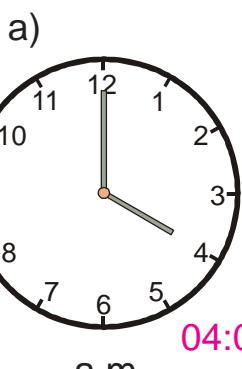
The tide is coming in and the water is rising at the rate of 20 cm per minute.

How many rungs will be visible after 9 minutes?

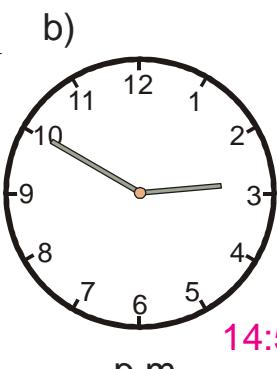
All ten rungs will still be visible because the ship floats.

*Try this question with your parents.*

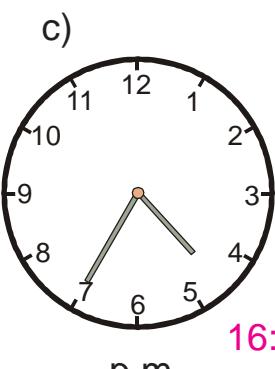
- 1) Write these times as 24 hour clock times



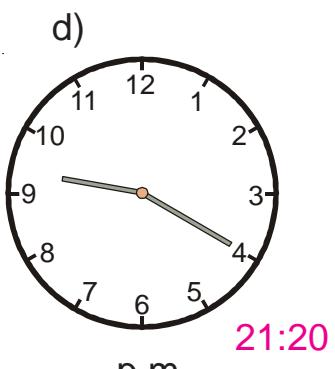
04:00



14:50



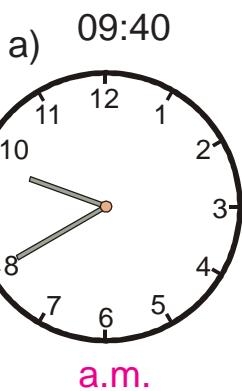
16:35



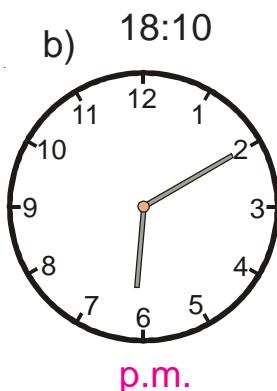
21:20

- 2) Draw these times on the clock faces.

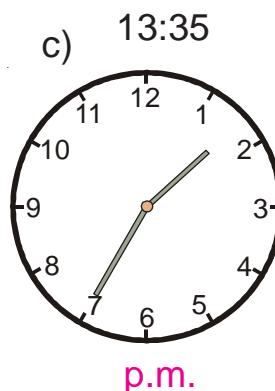
Underneath the clocks write whether the time is a.m. or p.m.



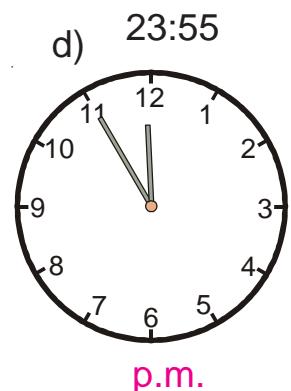
a.m.



p.m.



p.m.



p.m.

- 3) Peter wants to watch a programme which begins at 8.00 p.m.

It is now 4.30 p.m.

How much time will Peter have to wait?

Three and a half hours  
(3 hours 30 minutes)

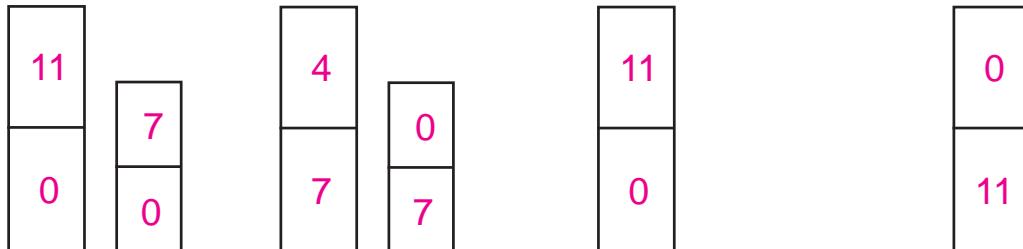
- 4) Susie is going to watch a programme which begins at 20:30 and lasts for one hour and forty five minutes.

What time will it finish? 22:15

- 1) Here is a train timetable for trains going from London Euston to Crewe.
- How many trains stop at Tamworth? 4
  - If Tom gets to London Euston at 15:30 how long will he have to wait for a train to take him to Crewe? 16 mins
  - How many minutes does the 09:38 London Euston train take to get to Northampton? 47 mins
  - How many minutes does the 14:23 Lichfield train take to get to Crewe? 46 mins
  - How long does the 17:48 London Euston train take to get to Crewe in hours and minutes? 1 hour and 46 mins

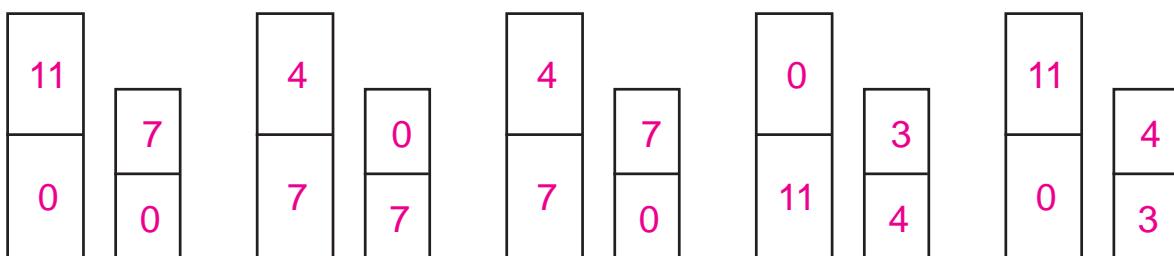
2) *This is the easiest way but you need 22 minutes:*

set them off together      after 7 mins put the egg in the boiling water      after 4 mins turn the 11 minute timer over again      11 minutes later your egg will have boiled for exactly 15 mins



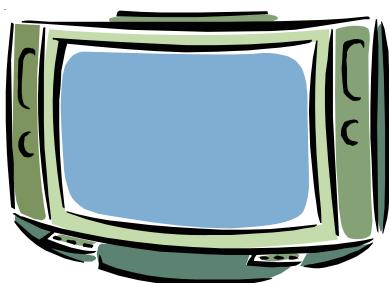
*This is a harder way but it only takes 15 minutes:*

Put the egg in the boiling water and set both timers off      after 7 mins turn the 7 minute timer over straight away      after another 4 mins turn the 7 minute timer over and wait for it to finish. You now have 15 minutes.



- 1) Write the following amounts of money using a £ sign and numbers.
  - a) Three pounds and thirty seven pence. £3.37
  - b) Twenty four pounds and fifty pence. £24.50
  - c) Two hundred and five pounds. £205
  - d) Nine pounds and sixty pence. £9.60
  - e) Nine pounds and six pence. £9.06
  - f) Forty eight pence. £0.48
- 2) Write the following amounts of money in words.
  - a) £2.78 Two pounds and seventy eight pence
  - b) £6.07 Six pounds and seven pence
  - c) £5.40 Five pounds and forty pence
  - d) £0.24 Twenty four pence
- 3) Work out the following on a calculator and write the answers correctly:
  - a)  $\text{£}115.23 \div 23$  £5.01
  - b)  $\text{£}100.80 \div 14$  £7.20
  - c)  $71\text{p} \times 10$  £7.10
  - d)  $\text{£}6.40 - \text{£}3.83 + \text{£}2.10$  £4.67
  - e)  $\text{£}14.83 + \text{£}6.17$  £21

Three men went into a second-hand shop to buy a television.



This is a very famous question and has puzzled many generations of children.

*The missing £1 is . . . . . please ask your teacher, your parents and/or your friends.*

We're just not allowed to tell you.

It was priced in the window at £30.

Each of them handed over £10 to the shop assistant.

As the assistant opened the till, the manager had a quiet word with him, "that TV is in the sale and is only £25 now, you will have to give them £5 back."

The assistant was very lazy and couldn't be bothered to count out the right change for each man.

Instead, he took 5 £1 coins out of the till.

He put two of them in his own pocket and gave each man £1 back.

*Here's the problem:*

The men have now paid £9 each for the TV.

The assistant has kept £2 for himself.

$3 \times £9 = £27$ .

$£27 + £2 = £29$ .

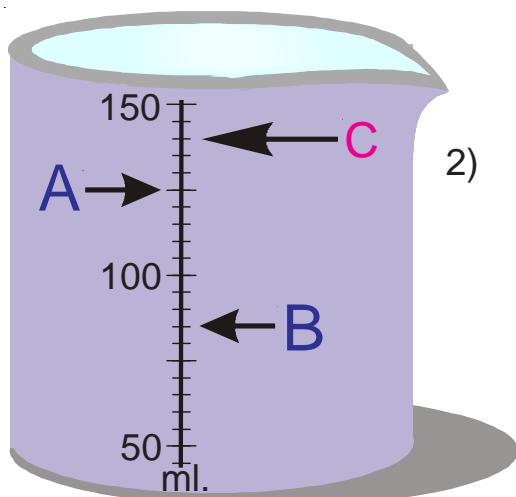
But £30 was handed over in the first place.

WHERE IS THE MISSING £1?

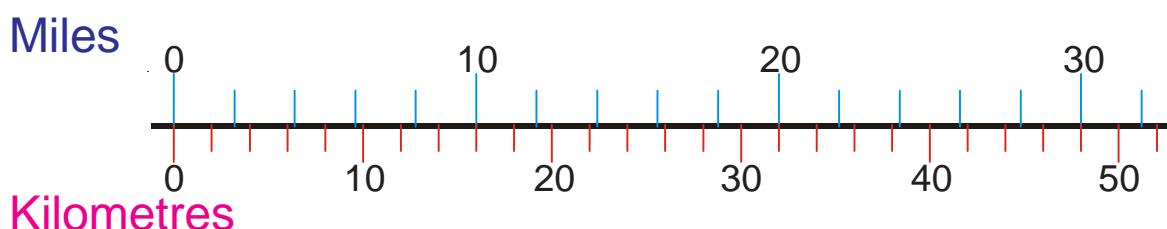
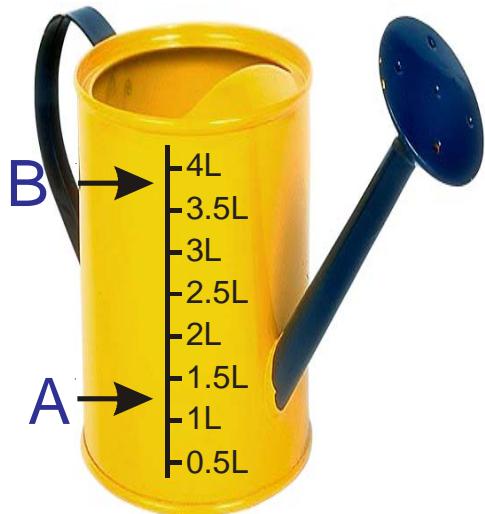
# N8

## Reading Scales Answers

- 1) a) If water comes up to arrow A, how much will there be in the container? **1.25 L**  
b) About how much water will there be if it comes up to arrow B?  
**About 3.8 L**



- 2) a) If milk comes up to arrow A, how much milk will there be in the container? **125 ml**  
b) How much milk will there be if it comes up to arrow B? **85 ml**  
c) Draw arrow C to show 140ml of liquid.



- 3) Use the scale to convert
- 10 miles to km. **16 km**
  - 40 km to miles. **25 miles**
  - 16 miles to km. **about 25.6 km**
  - 8 km to miles. **5 miles**

1)

- A    
- B    
- C    



Split the coins into three sets of three.

Put set A into one pan and B into the other.

If they balance, the fake is in C.

If A is heavier than B then the fake is in B.

If B is heaviest, the fake is in A.

Take the set of three coins with the fake in it and put one coin in one pan and another coin in the other pan.

If they balance, the other coin is the fake.

If they don't balance, the one that goes up is the fake.

2) You have a 3 pint jug and a 5 pint jug and as much water from a tap as you like.

How can you use the two jugs to measure out **exactly** 4 pints of water?

Fill the 5 pint jug and pour it into the 3 pint jug. This leaves 2 pints in the 5 pint jug.

Empty the 3 pint jug and pour the 2 pints from the 5 pint jug into the 3 pint jug.

Fill the five pint jug and pour into the 3 pint jug until it is full.

This will leave you exactly 4 pints in the 5 pint jug.

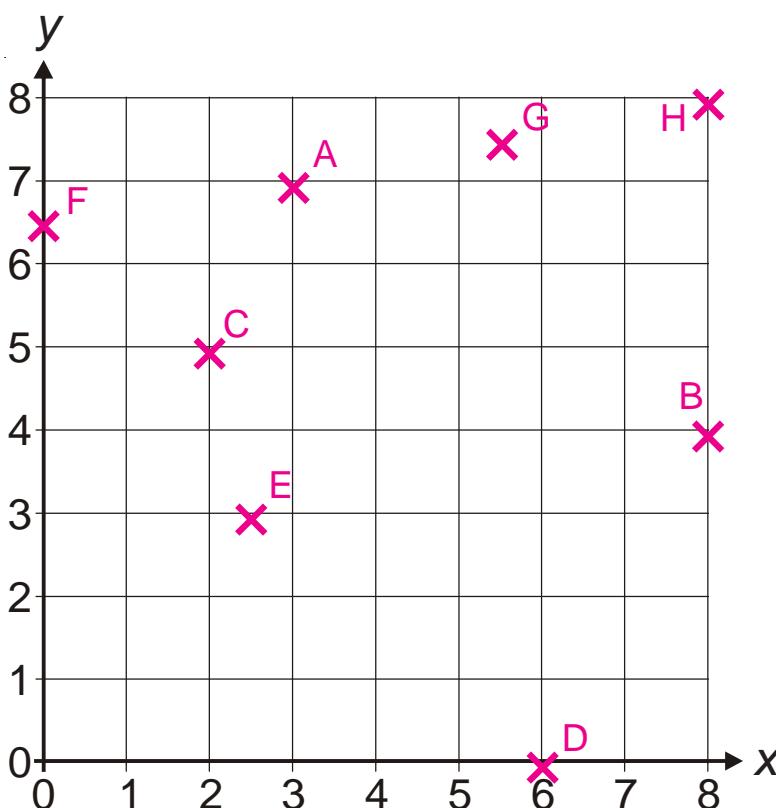
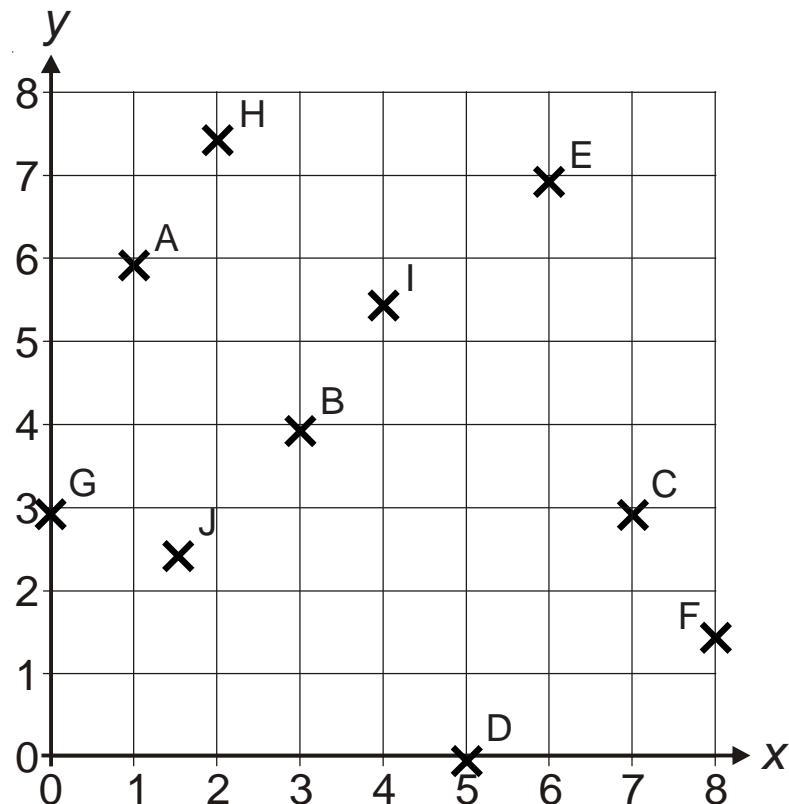


# A1a

## Coordinates - First Quadrant Answers

- 1) Write down the coordinates of the crosses labelled A to J.

- A (1, 6)
- B (3, 4)
- C (7, 3)
- D (5, 0)
- E (6, 7)
- F (8, 1.5)
- G (0, 3)
- H (2, 7.5)
- I (4, 5.5)
- J (1.5, 2.5)



- 2) Put crosses at the following points and label them with the correct letters.

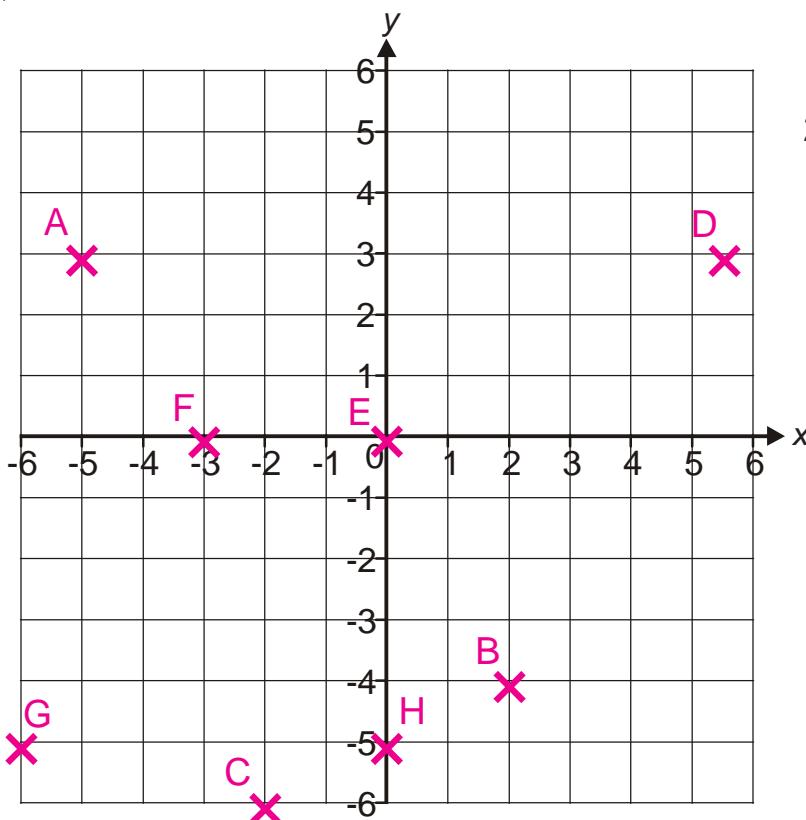
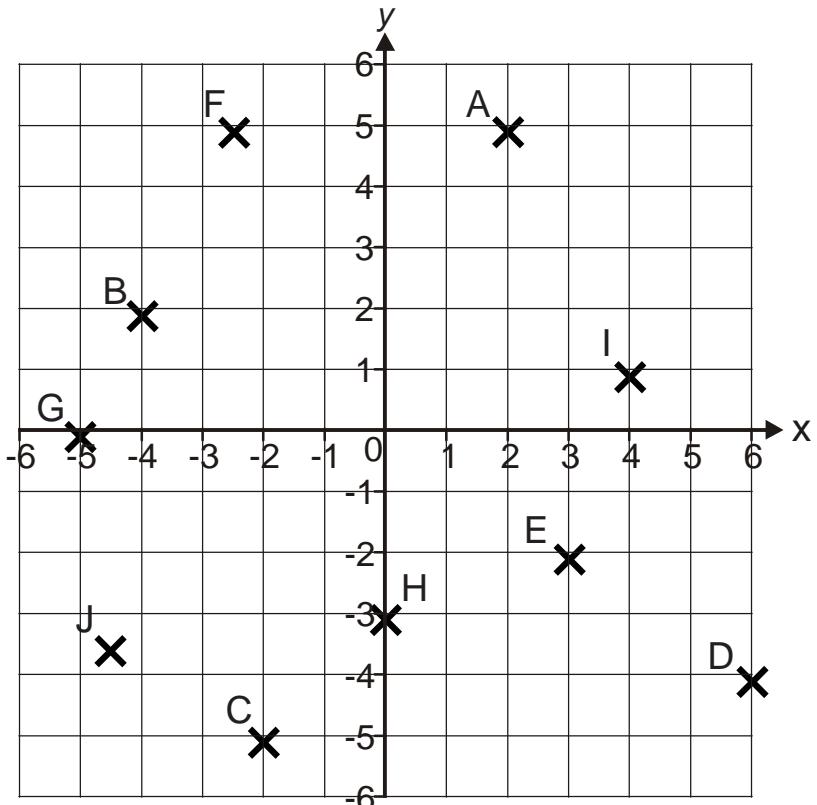
- A (3, 7)
- B (8, 4)
- C (2, 5)
- D (6, 0)
- E (2.5, 3)
- F (0, 6.5)
- G (5.5, 7.5)
- H (8, 8)

# A1b

## Coordinates - All 4 Quadrants Answers

- 1) Write down the coordinates of the crosses labelled A to J.

- A (2, 5)
- B (-4, 2)
- C (-2, -5)
- D (6, -4)
- E (3, -2)
- F (-2.5, 5)
- G (-5, 0)
- H (0, -3)
- I (4, 1)
- J (-4.5, -3.5)



- 2) Put crosses at the following points and label them with the correct letters.

- A (-5, 3)
- B (2, -4)
- C (-2, -6)
- D (5.5, 3)
- E (0, 0)
- F (-3, 0)
- G (-6, -5)
- H (0, -5)

# A1b

## Coordinates - All 4 Quadrants Answers

Clean underwear

(a)

WEAR  
CLEAN

(b)

Potatoes  
(POT followed by 8 O's)  
**POTOOOOOOOO**

(c)

Dr Doolittle  
**DR** doo

(d)

Robin Hood  
(Rob in Hood)  
**HOROBOD**

(e)

Painless operation

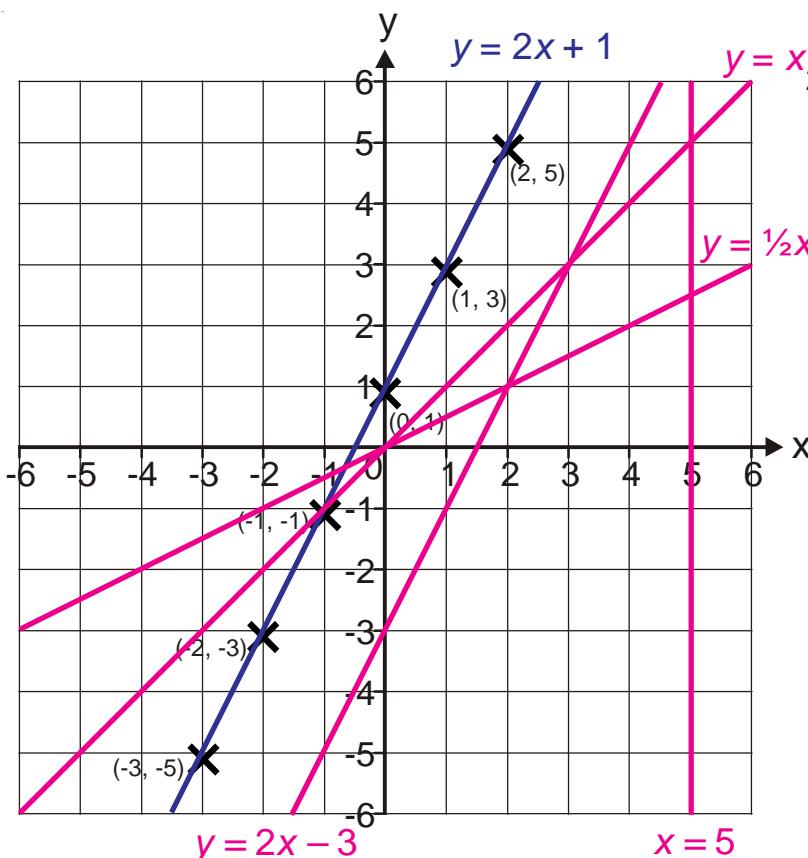
O \_ P E R A T I O N

(f)

Kiss and make up  
**XMASCARA**

(g)

The three musketeers  
must get here  
must get here  
must get here



2) Plot the following points on the grid, draw a line through the points and try and work out the name of the line.

- $y = x$  (because  $y$  always equals  $x$ )
- $y = \frac{1}{2}x$  (because the  $y$  coordinate is always half the  $x$  coordinate)
- $y = 2x - 3$  (multiply the  $x$  coordinate by 2 and then take away 3 and you always get the  $y$  coordinate)
- $x = 5$  (because  $x$  always equals 5 on this line)

## A2 Algebraic Vocabulary Answers

- 1) State whether each of the following is an expression, an equation or an inequality:
  - a)  $2x + 4 = 9$  Equation
  - b)  $3x + 4y$  Expression
  - c)  $5a - 1 < 10$  Inequality
  - d)  $6b + 7d = 20$  Equation
  - e)  $9 < 5x$  Inequality
  
- 2) How many terms does each of the following have?
  - a)  $3a + 4$  2
  - b)  $2x + 3y - 4z$  3
  - c)  $5 + 2n + 3m - 4p$  4
  
- 3) a) Write down any two numbers that are factors of 24  
Any two from 1, 2, 3, 4, 6, 8, 12, 24
- b) Write down all the factors of 12.  
1, 2, 3, 4, 6, 12
- c) Is 3 a factor of  $3x + 9$ ? Yes  
Explain how you know.  
Because it can be written as  $3(x + 3)$

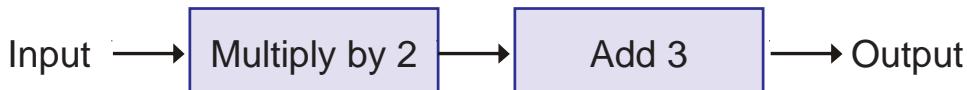
# A3

## Formulae Expressed in Words Answers

- 1) A vintage car hire firm charges £70 for the first day's hire followed by £55 per day for all other days.
- How much would it cost to hire a car for 2 days? **£125**
  - How much would it cost to hire a car for 9 days? **£510**
  - When Sue hires a car it costs her £345.  
How many days did she hire the car for? **6 days**

- 2) It costs 4p per copy on the school photocopier.
- How much would it cost to make 15 single-sided copies? **60p**
  - Jane has to make 6 copies of a document which is double-sided (writing on both sides).  
How much will it cost? **48p**
  - Ted copies a single-sided document but forgets how many copies he has made.  
Rather than counting them he simply looks at the bill and works it out from there.  
The bill was for £2.20.  
How many copies had he made? **55 copies**

Single-sided  
copies  
4p each



- 3) a) If Simon puts 7 into the number machine, what number comes out? **17**
- b) If 100 goes in, what comes out? **203**
- c) If  $5\frac{1}{2}$  goes in, what comes out? **14**
- d) If 2.25 goes in, what comes out? **7.5**
- e) If 25 comes out, what number was put in? **11**
- f) If 8 comes out, what number was put in? **2.5**
- g) If  $x$  goes in, what comes out?  **$x \times 2 + 3$  or  $2 \times x + 3$  or  $2x + 3$**

preferred  
↓

# A3

## Formulae Expressed in Words Answers

- 1) Choose any number.  $x$   
 Add three to it.  $x + 3$   
 Multiply your result by two.  $2x + 6$   
 Add six to it.  $2x + 12$   
 Halve your answer.  $x + 6$   
 Subtract your original number.  $6$

You should be left with six.

Try to find out why you are always left with six.

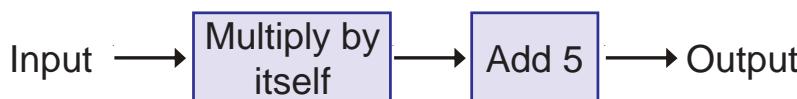
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2)	Input	Output
	1	<u>2</u>
	4	<u>14</u>
	10	<u>38</u>
	2.5	<u>8</u>
	-3	<u>-14</u>
	<u>8</u>	30
	<u>12.5</u>	48
	<u>-4</u>	-18
	$x$	$4x - 2$

3)	Input	Output
	1	<u>-4</u>
	4	<u>8</u>
	10	<u>32</u>
	2.5	<u>2</u>
	-3	<u>-20</u>
	<u>9.5</u>	30
	<u>14</u>	48
	<u>-2.5</u>	-18
	$x$	$4(x - 2)$

- 4) Copy the table on the right.

Use this function machine to complete the table.



Input	Output
3	<u>14</u>
10	<u>105</u>
-4	<u>21</u>
<u>-7</u> or <u>7</u>	54
$x$	$x^2 + 5$

# A4

## Algebraic Notation Answers

What expression do I have if I think of a number, double it and then add three?

**Answer:**  $2x + 3$

Say what the expression  $4x + 17$  means in words.

**Answer:** Take a number, multiply it by four and then add seventeen.

- 1) Write down the expression you will have if you think of a number (let  $x$  be the number) and then:

a) add three to it  $x + 3$

b) double it  $2x$

c) multiply it by three and then subtract four  $3x - 4$

d) multiply it by itself  $x \times x$  or  $x^2$

e) divide it by two  $\frac{x}{2}$

f) divide it by two and then add one  $\frac{x}{2} + 1$

g) add three to it and multiply the result by two  $2(x + 3)$

h) multiply it by five, add four, divide the result by two  $\frac{5x + 4}{2}$

- 2) Say what the following expressions mean in words.

a)  $x + 6$  Take a number and add six to it

b)  $x - 7$  Take a number and subtract seven

c)  $8x$  Take a number and multiply it by eight

d)  $4x + 2$  Take a number, multiply it by four and then add 2

e)  $\frac{x}{5}$  Take a number and divide it by five

f)  $6(x + 7)$  Take a number, add seven to it and multiply the result by six

g)  $4(3x - 1)$  Take a number, multiply it by three, subtract 1 and then multiply the result by four

- 
- 3) If  $s = 2v$ , work out the value of  $s$  when  $v = 7$   $s = 14$

- 8) If  $c = 4$  and  $d = 3$ , find the value of:

- 4) If  $y = 3t + 4$ , work out the value of  $y$  when  $t = 5$   $y = 19$

a)  $2c$  8

- 5) If  $g = 2t - 1$ , work out the value of  $g$  when  $t = 9$   $g = 17$

b)  $2c - d$  5

- 6) If  $f = 2(t + 8)$  and  $t = 3$ , find the value of  $f$   $f = 22$

c)  $cd$  12

- 7) If  $d = 3(2e - 3)$  and  $e = 5$ , find the value of  $d$   $d = 21$

d)  $5c + 2d$  26

# A4

## Algebraic Notation Answers

The body mass index (BMI) is a measure used to show if an adult is at a healthy weight. It doesn't apply to children, only adults.

Here is a formula for calculating BMI

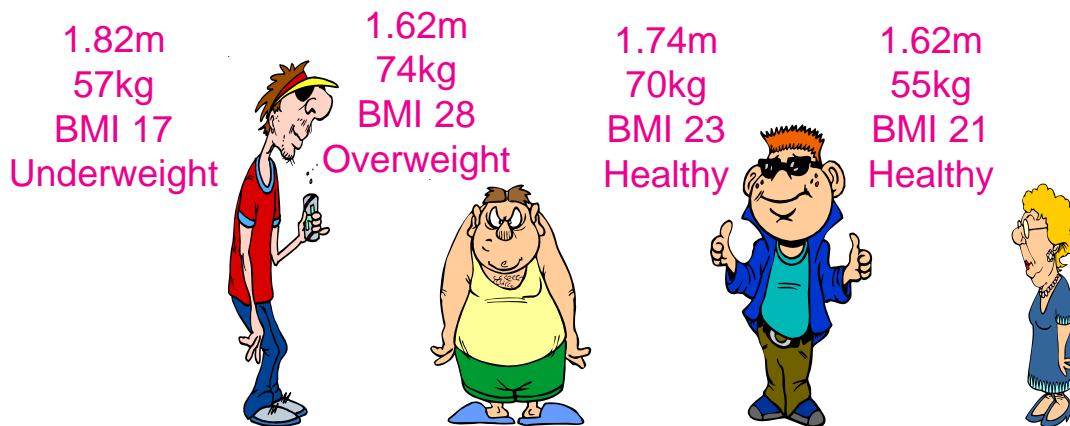
$$\text{BMI} = (\text{weight in kg}) \div (\text{height in m}) \div (\text{height in m})$$

A person with BMI between 18.5 and 25 is at a healthy weight.

A person with BMI less than 18.5 is underweight.

A person with BMI between 25 and 30 is overweight.

A person with BMI over 30 is obese.



Here are the heights and weights of the four people above.  
They are in no particular order.

<b>Height (m)</b>	1.74	1.82	1.62	1.62
<b>Weight (kg)</b>	70	57	55	74
<b>BMI</b>	23	17	21	28

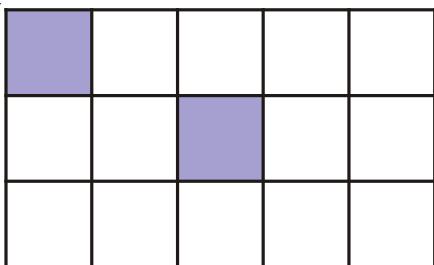
- Work out the BMI for each height and weight and put them in the table.  
Give your answers to the nearest whole number.
- Match each height, weight and BMI with the correct person.
- For each person, decide whether he/she is underweight, healthy, overweight or obese - write the answer next to each person.
- A woman is 1.65 m tall and weighs 45.6 kg.  
She worries that she is overweight.  
Is she right? No, she has a BMI of 16.7 and is underweight

# R1a

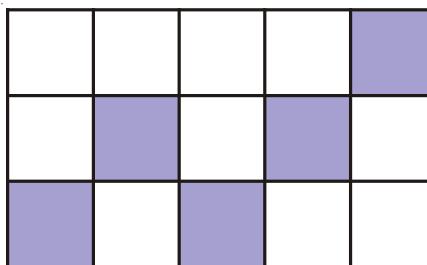
## Introduction to Ratio Real-Life Contexts Answers

- 1) For each of the three grids below, write down the ratio of shaded squares to unshaded squares.  
Simplify the ratios if possible.

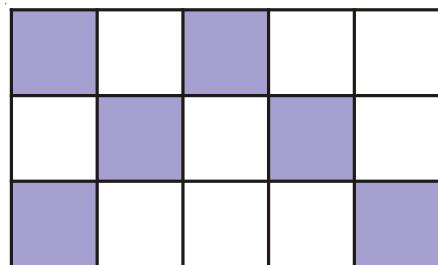
a)  $2 : 13$



b)  $5 : 10 \quad 1 : 2$



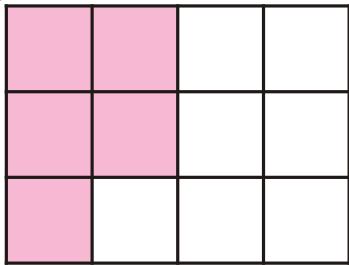
c)  $6 : 9 \quad 2 : 3$



- 2) Shade in squares for each grid to give the correct ratios.

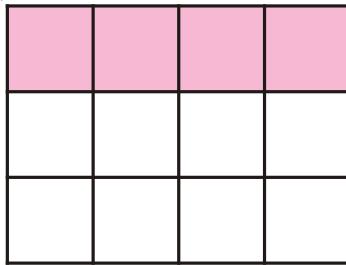
a) Shaded Unshaded

$5 : 7$



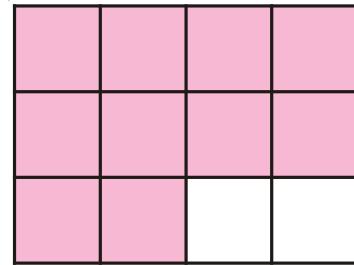
b) Shaded Unshaded

$1 : 2$



c) Shaded Unshaded

$5 : 1$



- 3) The instructions on a lemon squash bottle are as follows:
- 1 part squash to 4 parts water
- If you put 20 ml of squash in a glass, how much water would you need? **80 ml**
  - If you had used 200 ml of water, how much squash should be in the drink? **50 ml**
  - If you want to make 500 ml of squash drink, how much squash should be used and how much water? **100 ml squash** **400 ml water**

# R1a

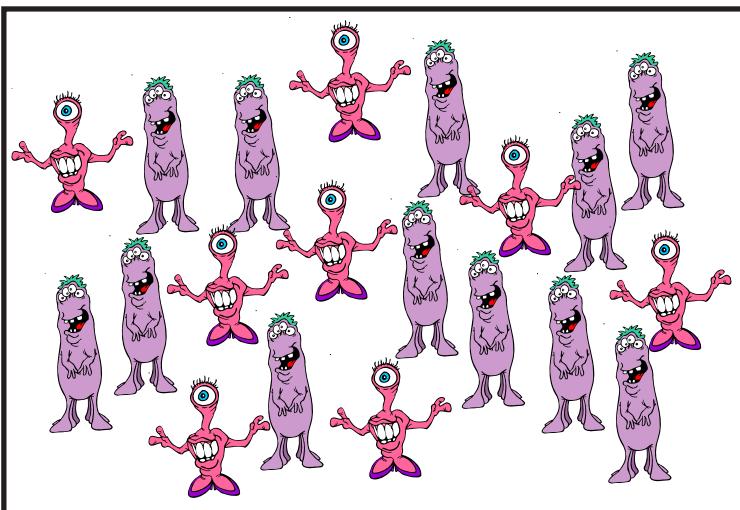
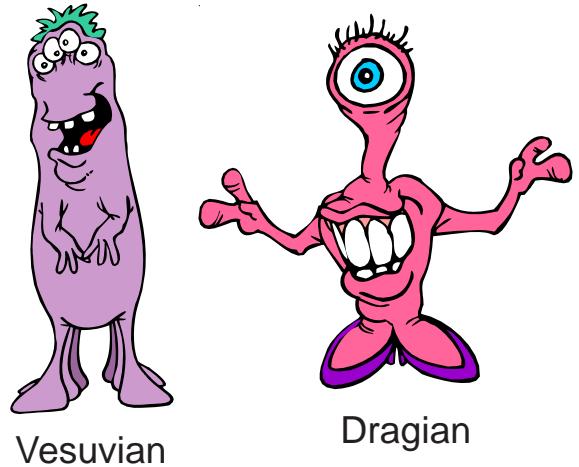
## Introduction to Ratio Real-Life Contexts Answers

- 1) Here we have a fine example of a Vesuvian and a Dragian.

If you count carefully you can see that the ratio of teeth is 5 : 7

- What is the ratio of feet? **6 : 2, 3 : 1**
- What is the ratio of eyes? **4 : 1**
- What is the ratio of fingers? **6 : 6, 1 : 1**

*Check that you have given all ratios in the simplest form.*



- 3) In another picture of Vesuvians and Dragians we only know two things:

Firstly, there are more Vesuvians than Dragians.

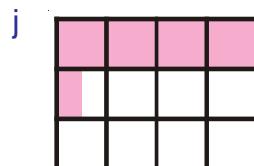
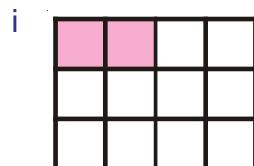
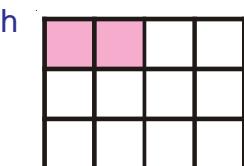
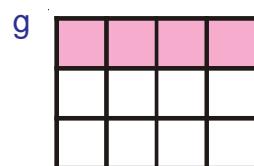
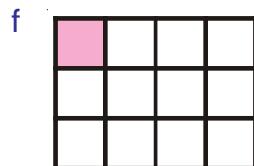
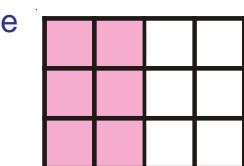
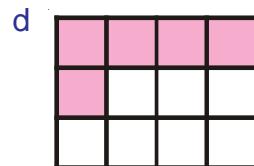
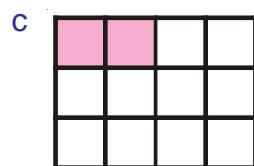
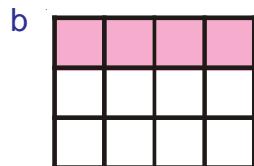
Secondly, there are 46 teeth altogether in the picture.

Work out how many Vesuvians and Dragians there are in the picture. **5 Vesuvians**

**3 Dragians**

# R1b

## Introduction to Ratio Shading Answers



Shaded : Unshaded

a	1	3
b	1	2
c	1	5
d	5	7
e	1	1
f	1	11
g	2	4
h	0.5	2.5
i	0.2	1
j	9	15

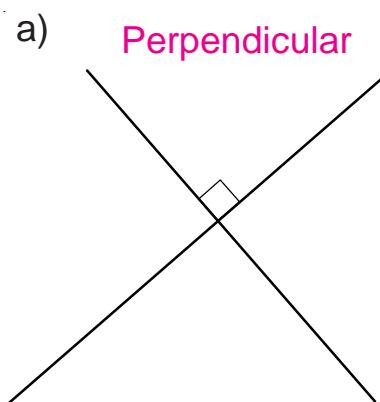
- 1) a) How many grams are in 3 kg? **3000**  
b) How many grams are in 4.5 kg? **4500**  
c) Convert 2 kg to g. **2000 g**  
d) Convert 6000 g to kg. **6 kg**  
e) How many kg is 1500 g? **1.5 kg**
  
- 2) a) How many millilitres are in 9 litres? **9000**  
b) How many litres is 7000 ml? **7**  
c) Convert 3400 ml to L. **3.4 L**  
d) Convert 8L to ml. **8000 ml**  
e) How many ml are in 7.3 L? **7300**
  
- 3) a) How many cm are in 3 m? **300**  
b) How many mm are in 11 centimetres? **110**  
c) Convert 400 cm to m. **4 m**  
d) Convert 3 km to m. **3000 m**  
e) How many mm are in 5 m? **5000**  
f) Convert 9600 mm to m. **9.6 m**

# G1

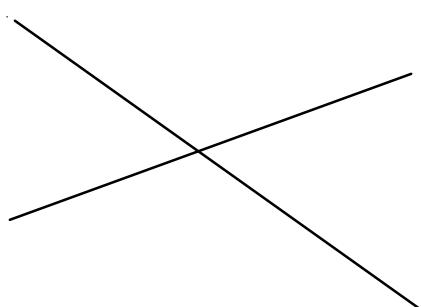
## Basic Geometric Definitions Answers

1) Which of these diagrams show perpendicular lines?

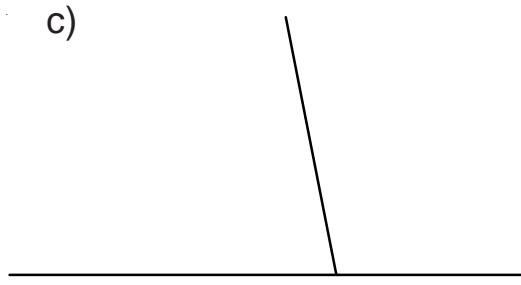
a) Perpendicular



b)

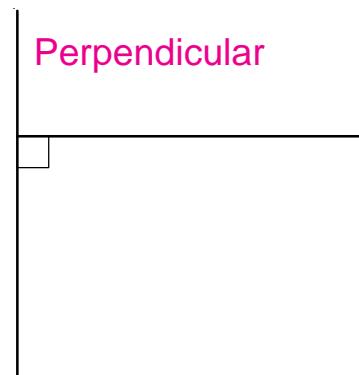


c)



d) Perpendicular

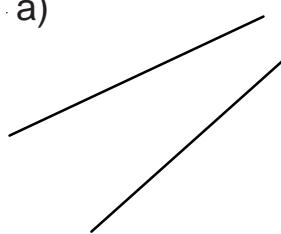
d)



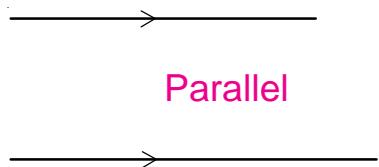
2) Perpendicular lines meet at what angle? 90 degrees

3) Which of these diagrams show parallel lines?

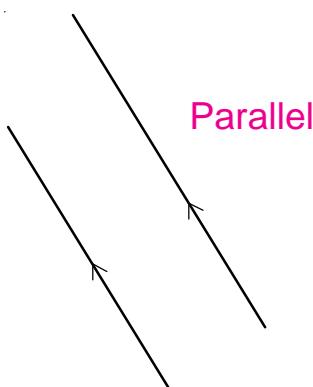
a)



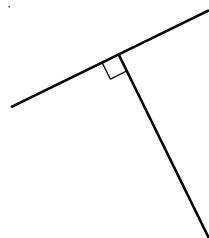
b)



c)



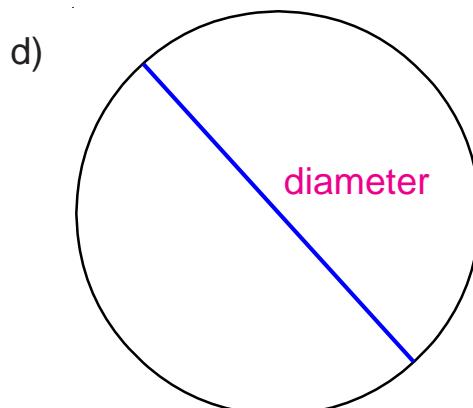
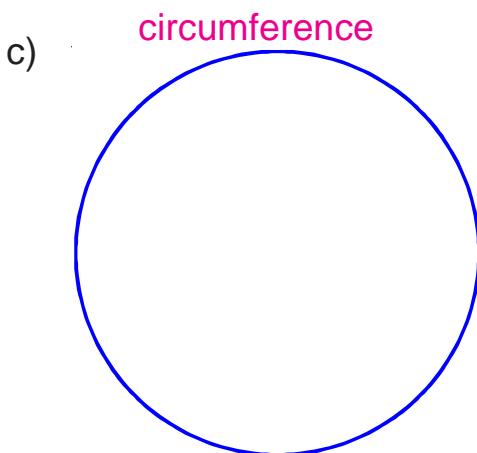
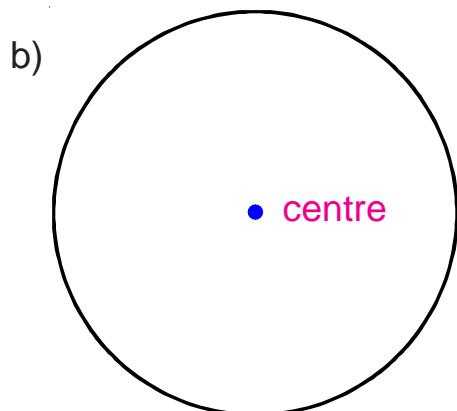
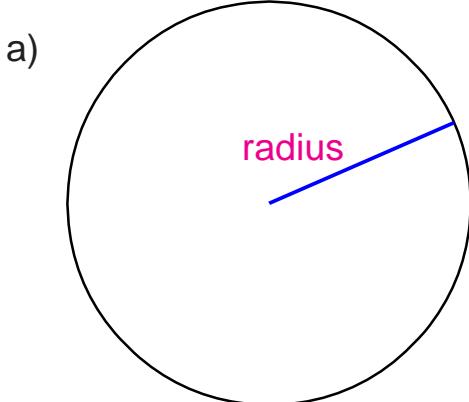
d)



# G2

## Properties of Circles Answers

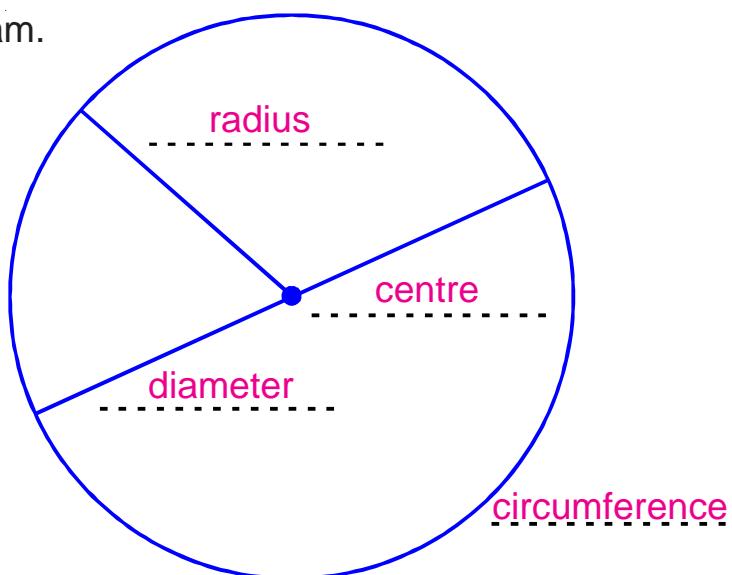
- 1) Name the part of the circle shown on each diagram.



- 2) What is the relationship between the radius and the diameter of a circle?

The radius is half the length of the diameter.

- 3) Label this diagram.



**G3**

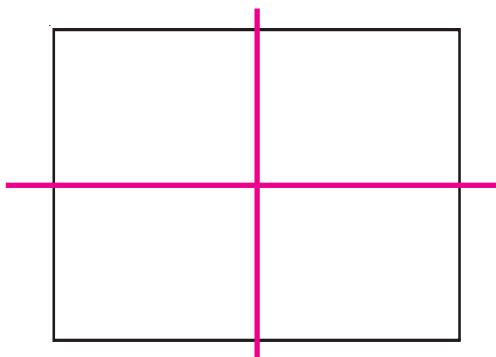
# Line Symmetry

## Answers

Look at each shape, read the description and then draw in all the lines of symmetry.

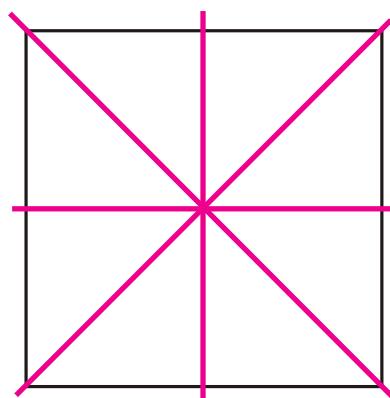
1) **Rectangle**

Two lines of symmetry



2) **Square**

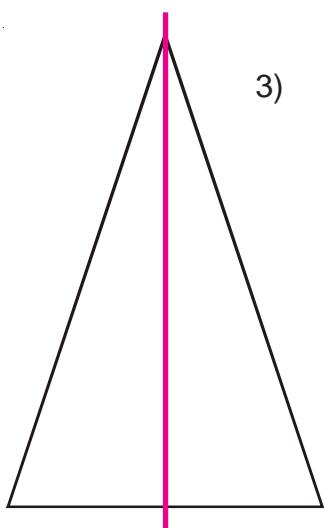
Four lines of symmetry



3)

**Isosceles triangle**

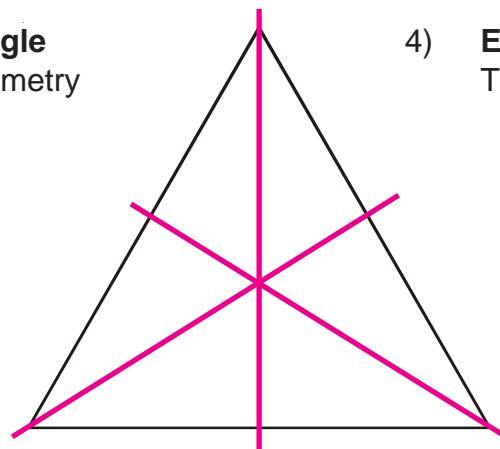
One line of symmetry



4)

**Equilateral triangle**

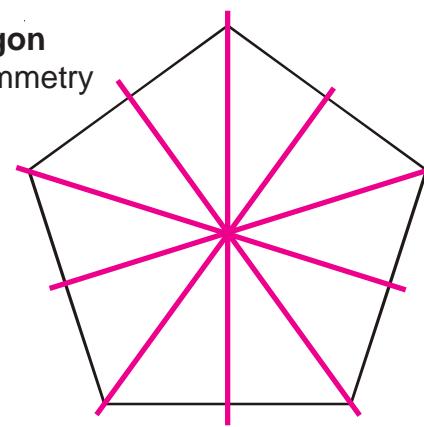
Three lines of symmetry



5)

**Regular pentagon**

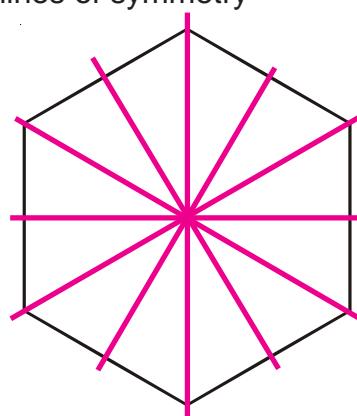
Five lines of symmetry



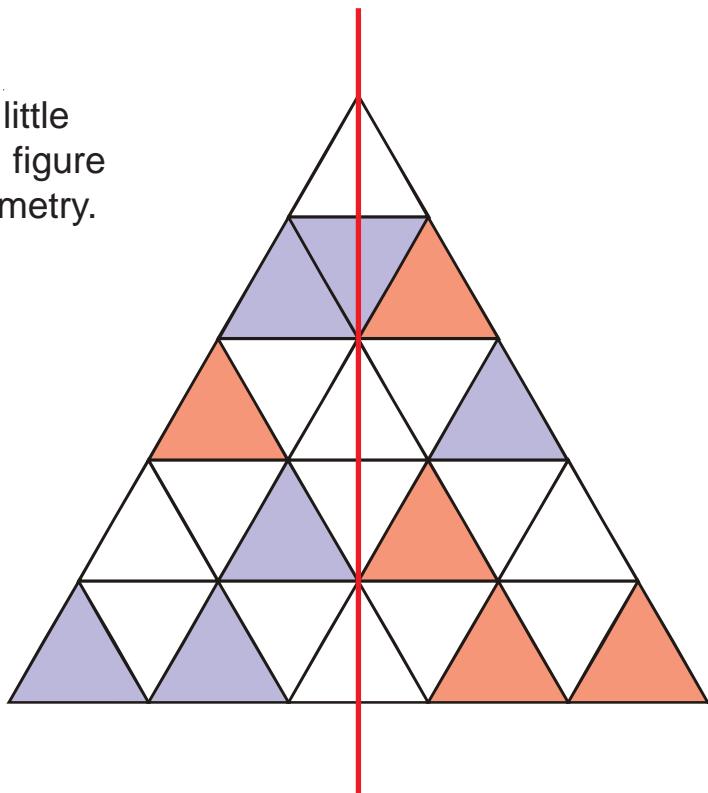
6)

**Regular hexagon**

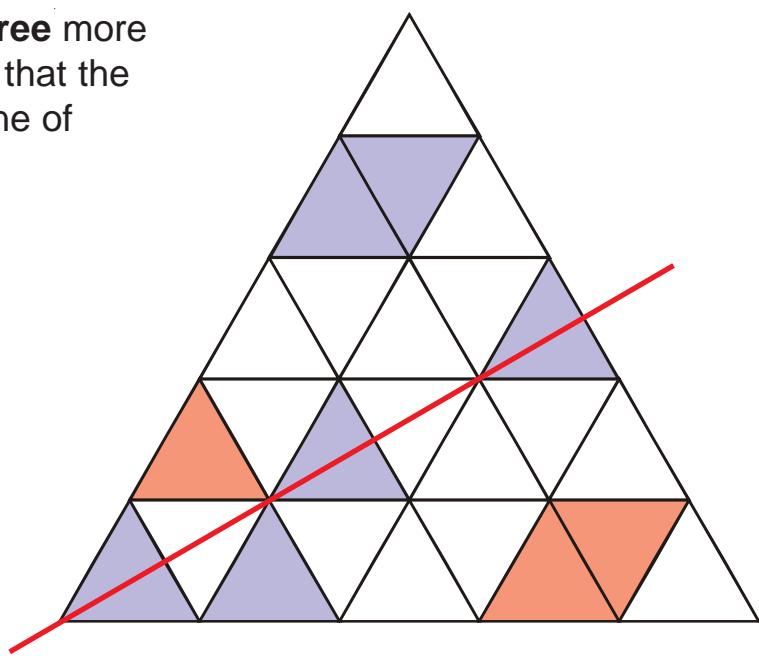
Six lines of symmetry



- 1) Shade in **five** more little triangles so that the figure has one line of symmetry.

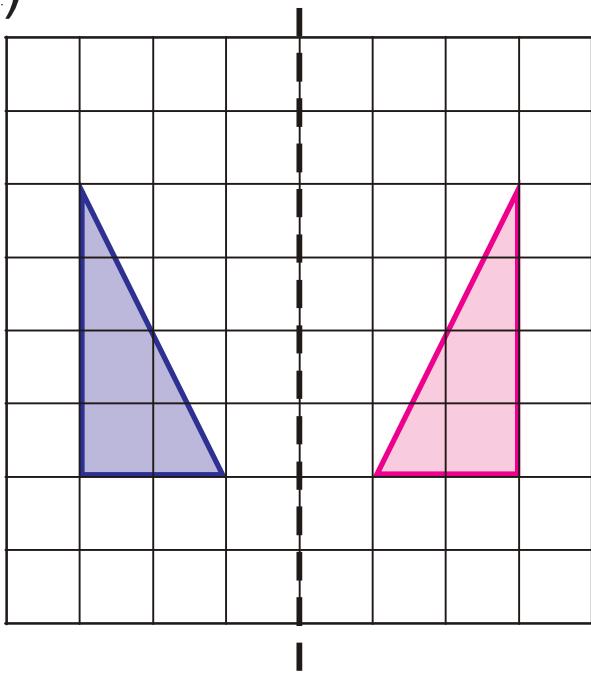


- 2) Shade in **just three** more little triangles so that the figure has one line of symmetry.

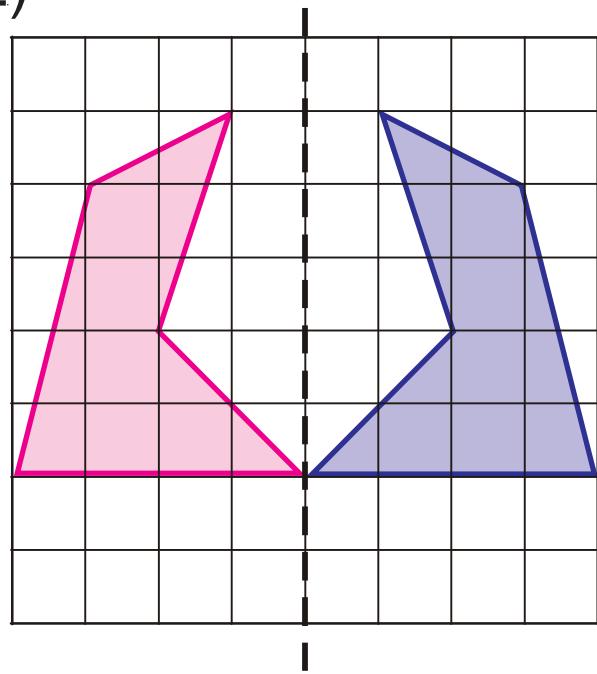


In all four questions, reflect the shaded shape in the dotted mirror line.

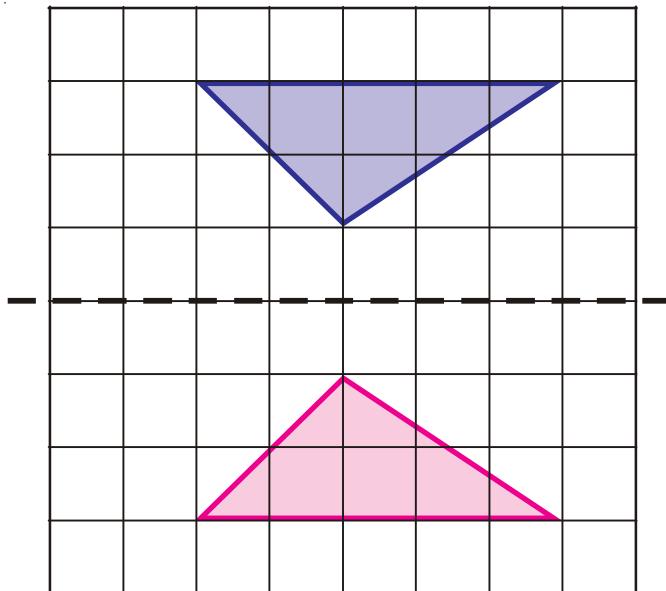
1)



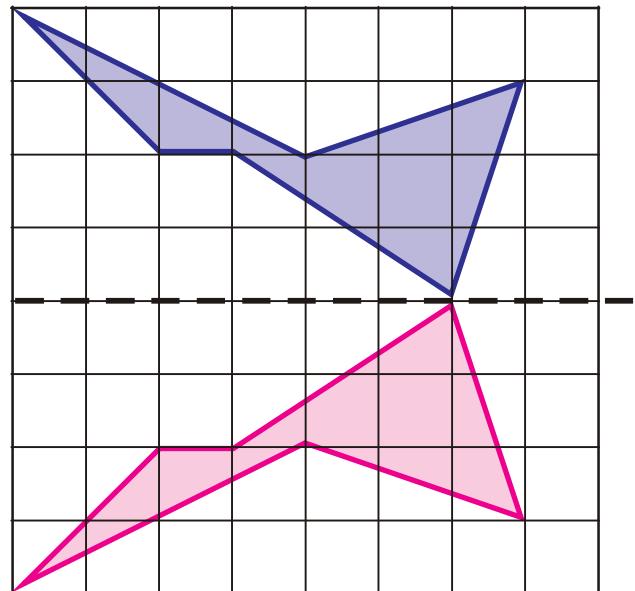
2)



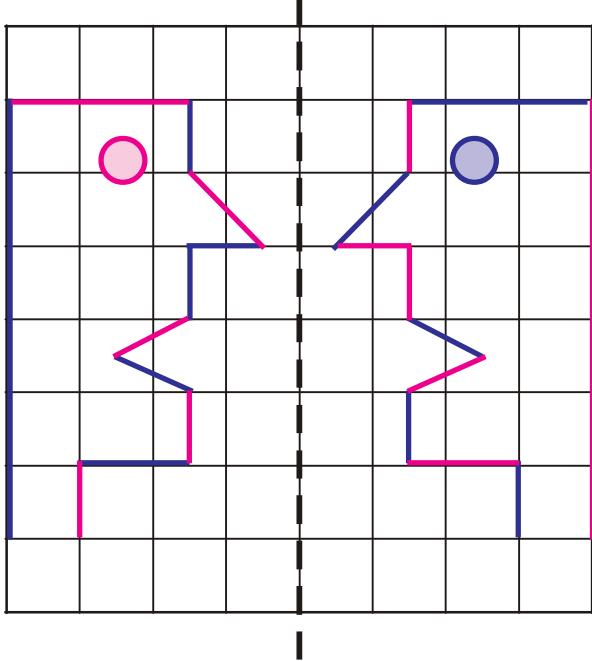
3)



4)

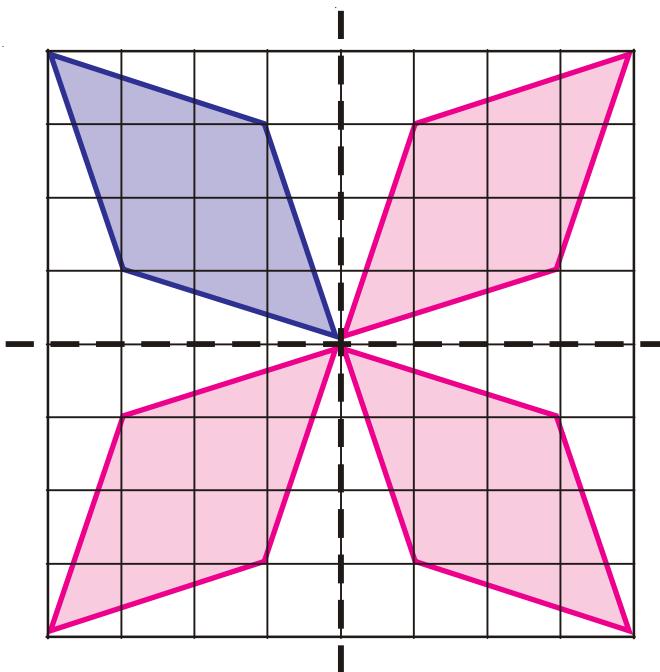


- 1) Reflect every line in the dotted mirror line.

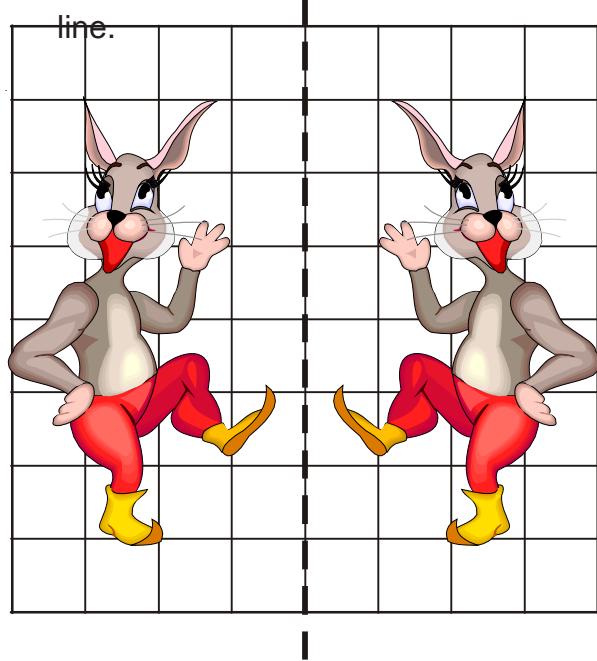


- 3) Reflect the shape in the vertical mirror line.

Then, reflect both shapes in the horizontal mirror line.

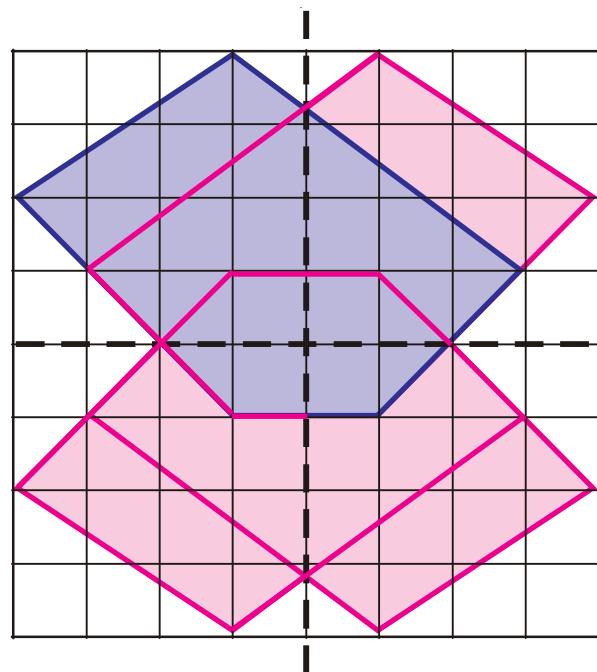


- 2) Use the grid to help you reflect Robbie Rabbit in the dotted mirror line.



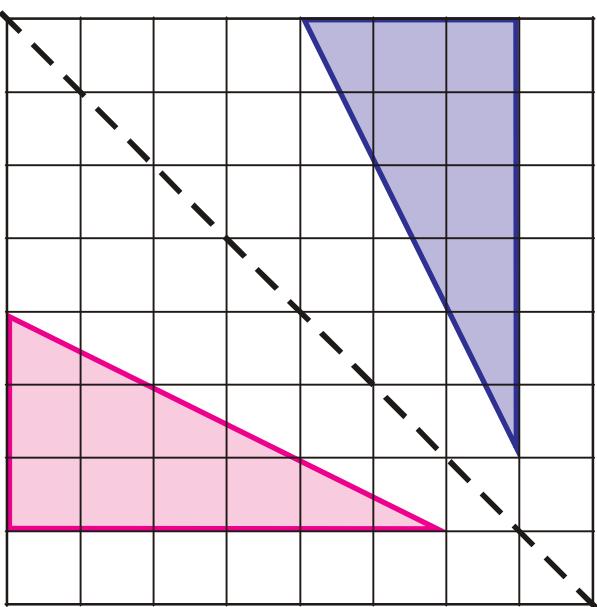
- 4) Reflect the shape in the vertical mirror line.

Then, reflect both shapes in the horizontal mirror line.

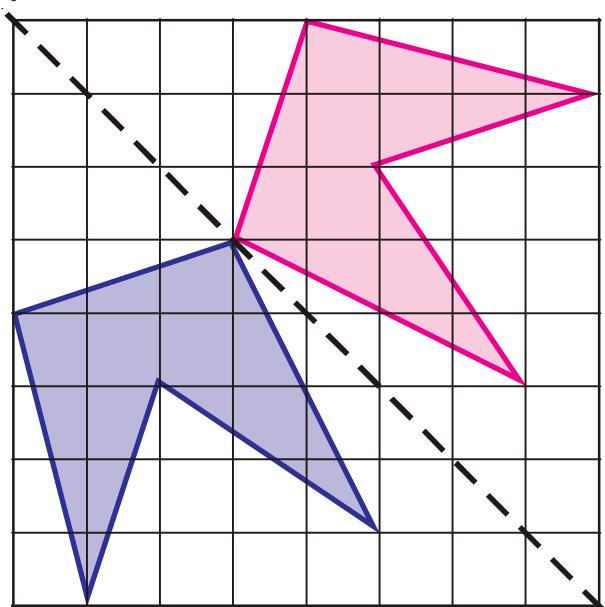


In all four questions, reflect the shaded shape in the dotted mirror line.

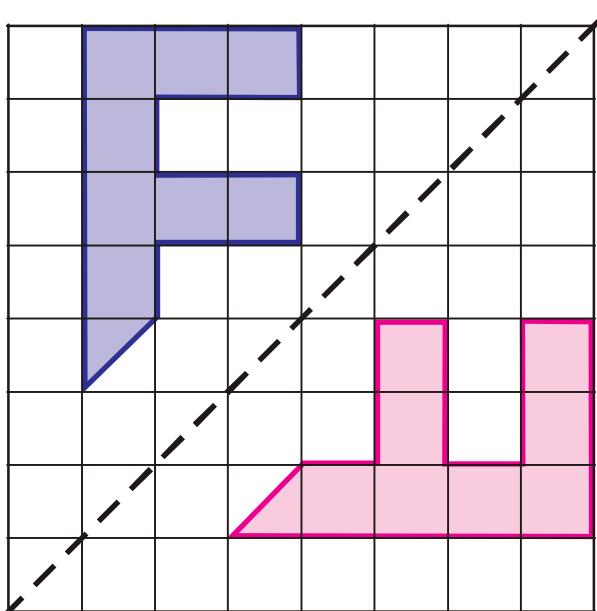
1)



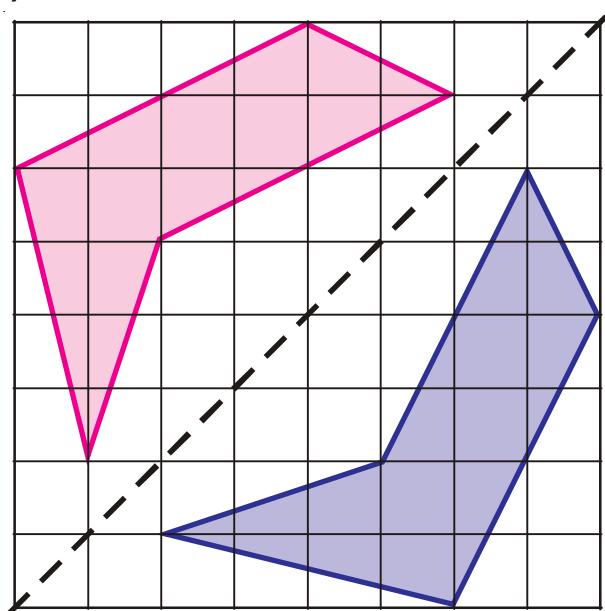
2)



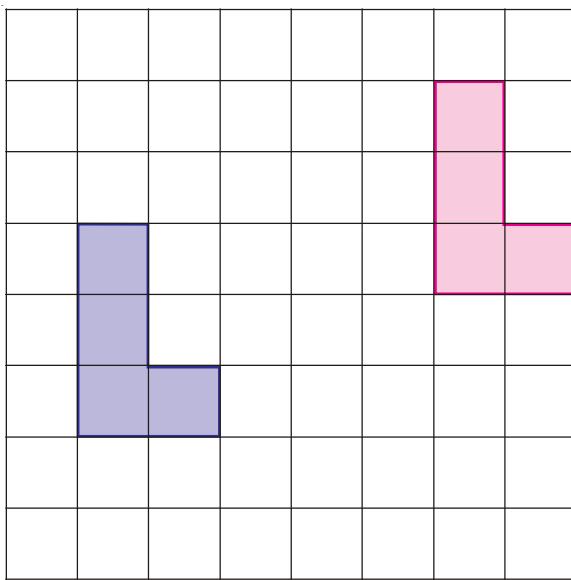
3)



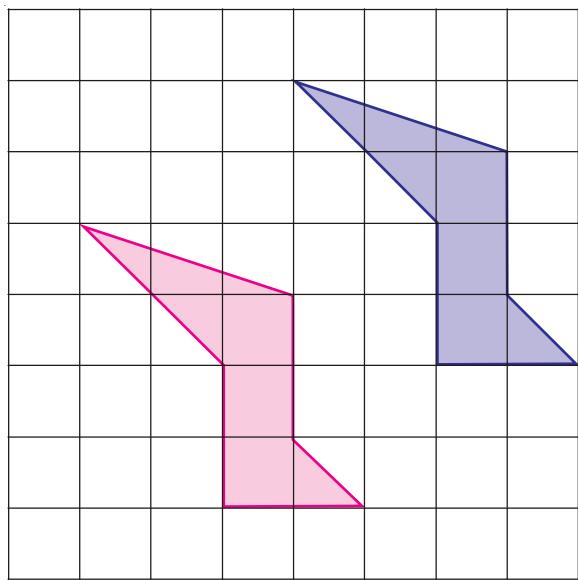
4)



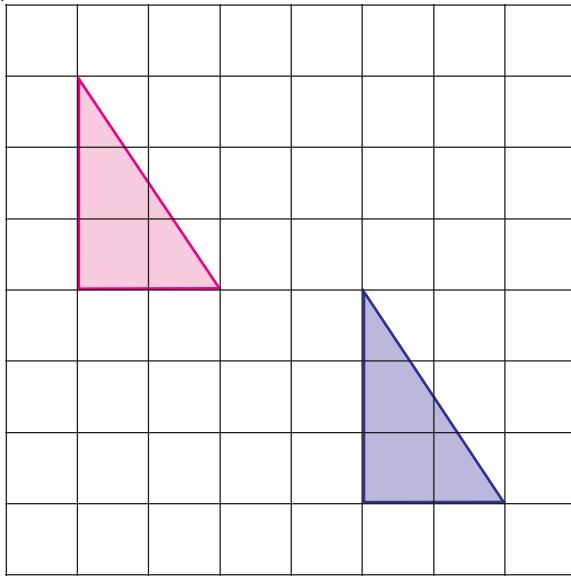
- 1) Translate the shape 5 squares to the right and 2 squares up.



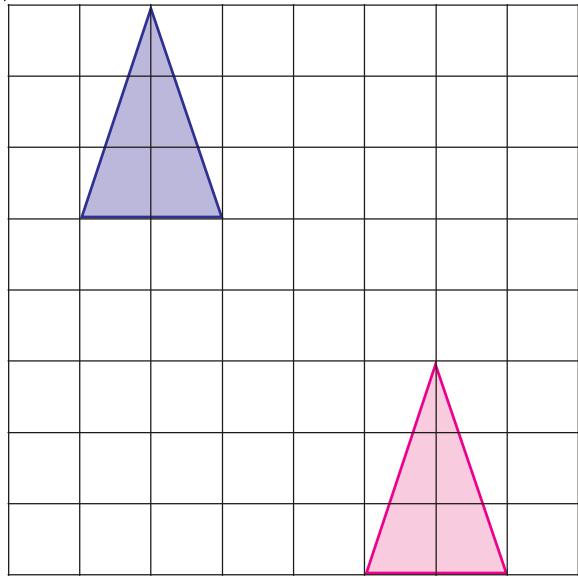
- 2) Translate the shape 3 squares to the left and 2 squares down.



- 3) Translate the shape with vector  $\begin{pmatrix} -4 \\ 3 \end{pmatrix}$



- 4) Translate the shape with vector  $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$



**G5**

# Translation Answers

Use tracing paper and translate the following shapes.

A with vector  $\begin{pmatrix} -3 \\ -2 \end{pmatrix}$

D with vector  $\begin{pmatrix} 2 \\ 0 \end{pmatrix}$

G with vector  $\begin{pmatrix} 0 \\ 3 \end{pmatrix}$

B with vector  $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$

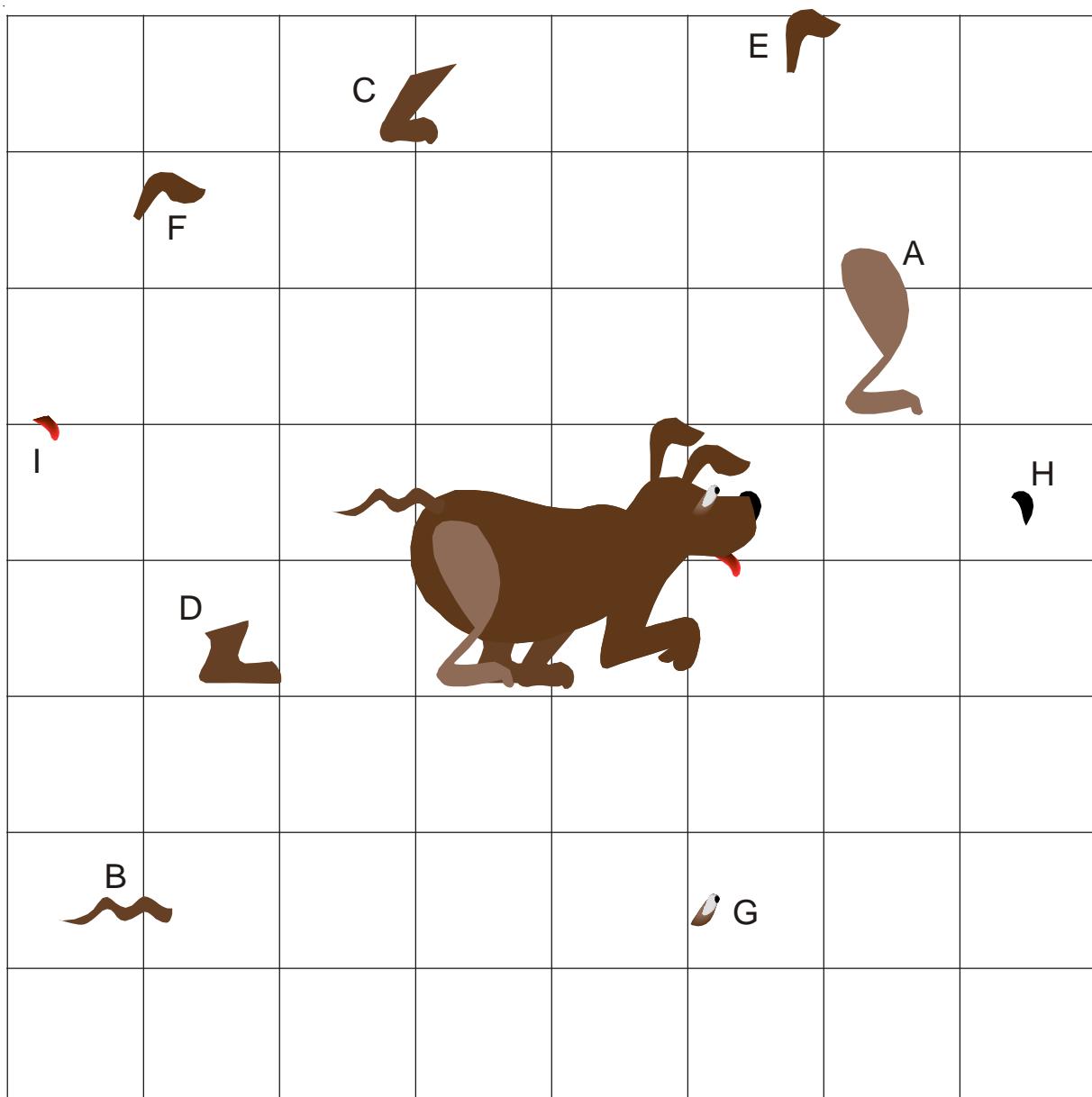
E with vector  $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$

H with vector  $\begin{pmatrix} -2 \\ 0 \end{pmatrix}$

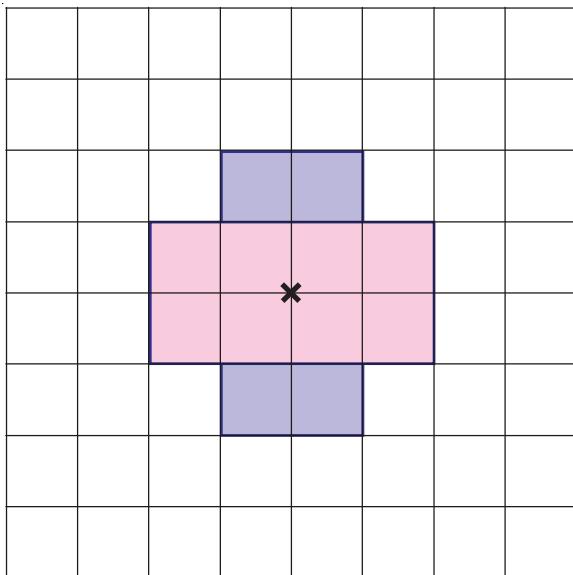
C with vector  $\begin{pmatrix} 1 \\ -4 \end{pmatrix}$

F with vector  $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$

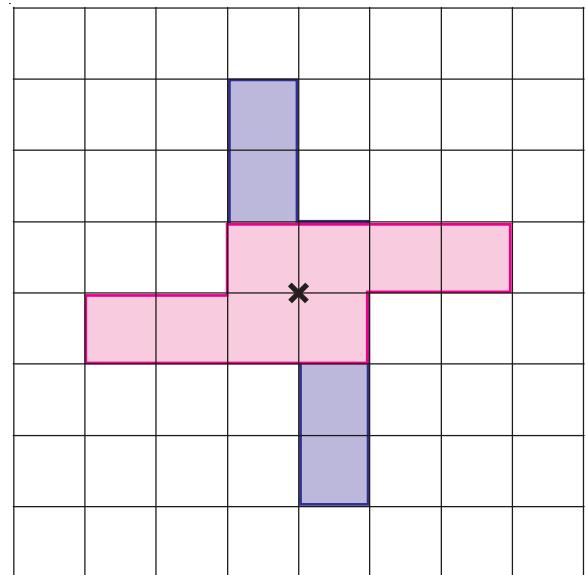
I with vector  $\begin{pmatrix} 5 \\ -1 \end{pmatrix}$



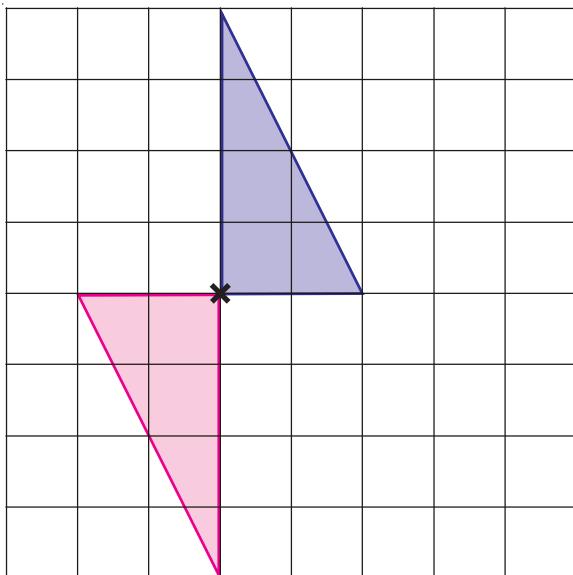
- 1) Rotate the shape 90° about the cross.



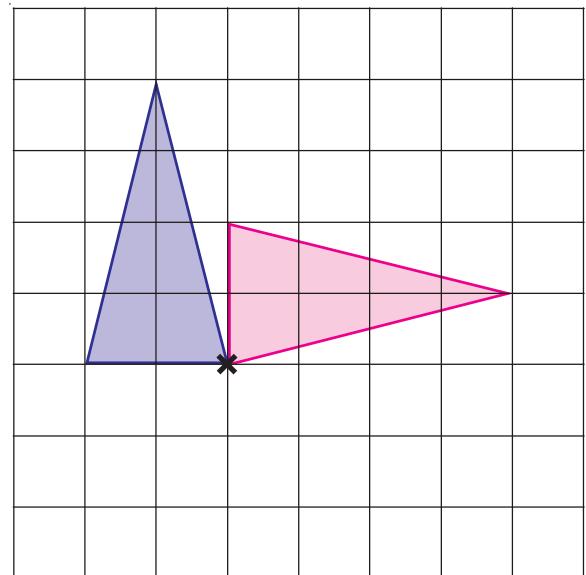
- 2) Rotate the shape 90° about the cross.



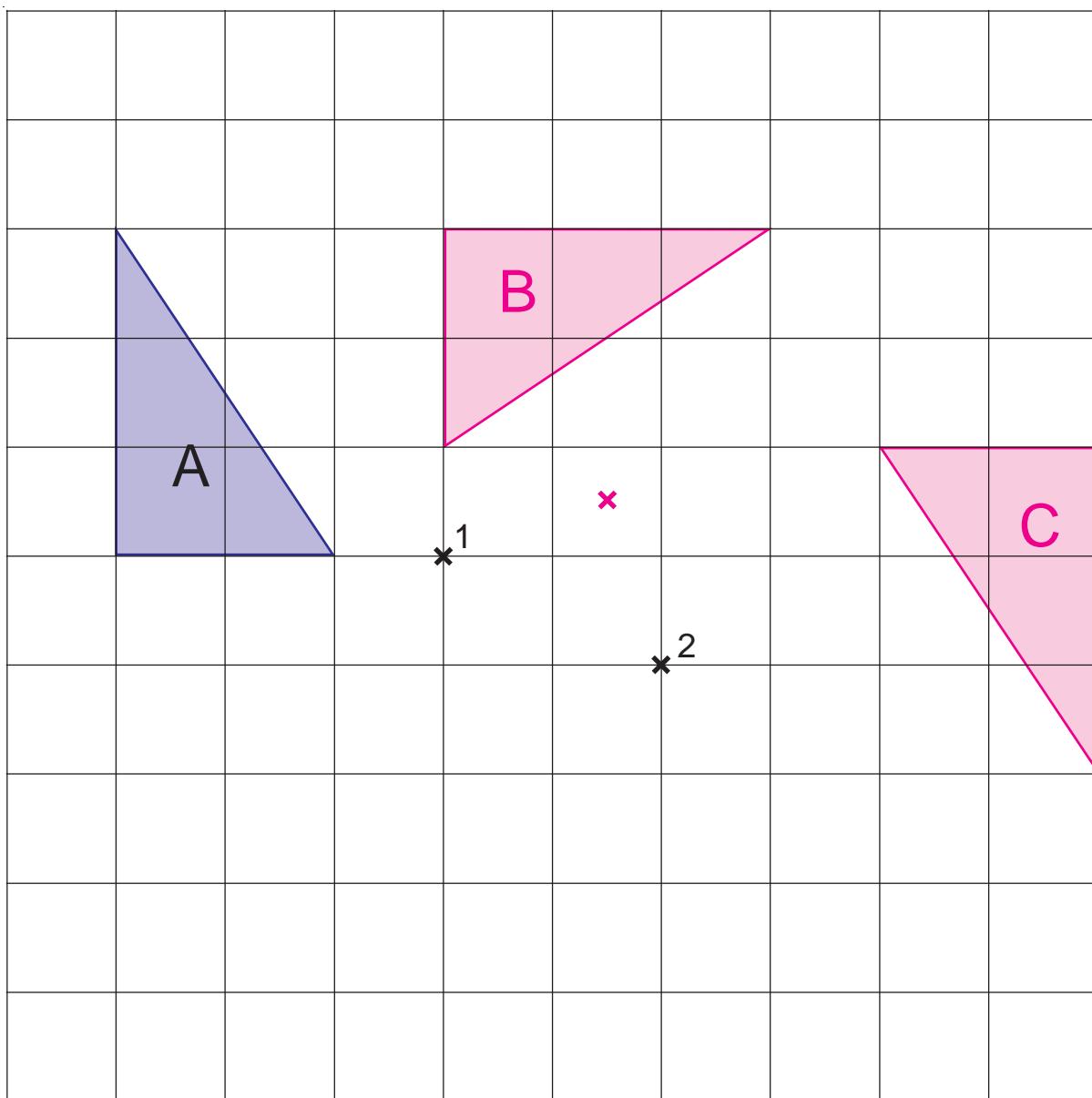
- 3) Rotate the shape 180° about the cross.



- 4) Rotate the shape 90° clockwise about the cross.



- a) Rotate triangle A  $90^\circ$  clockwise about cross 1.  
Label your new triangle B.
- b) Rotate triangle B  $90^\circ$  clockwise about cross 2.  
Label your new triangle C.
- c) How many degrees would you need to rotate triangle A to get to triangle C?  $180^\circ$
- d) Mark with a cross the centre of rotation to get from A to C.

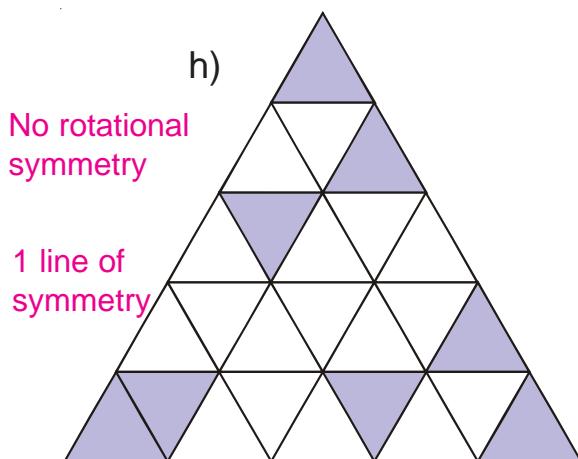
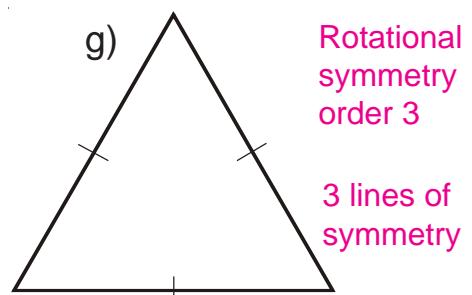
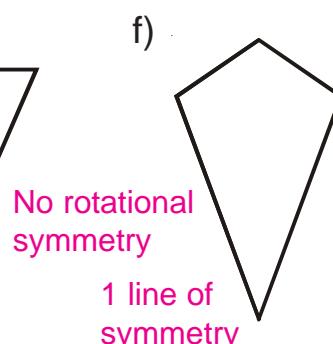
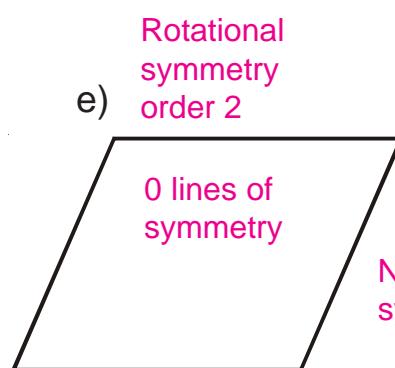
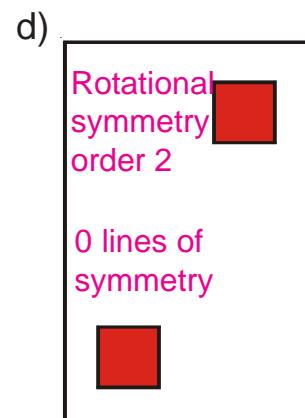
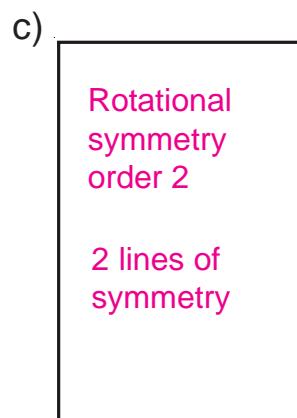
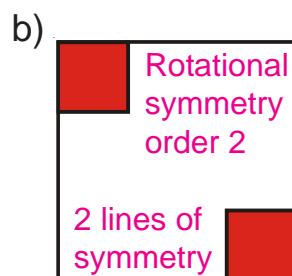
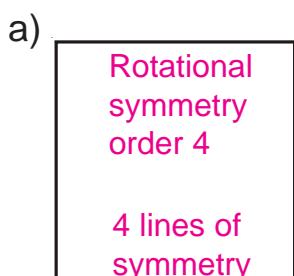


# G7 Rotational Symmetry

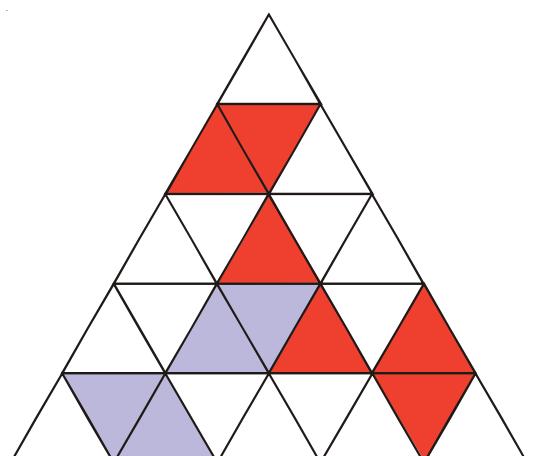
## Answers

1) For figures a to h, work out

- i) The order of rotational symmetry.
- ii) How many lines of symmetry it has.



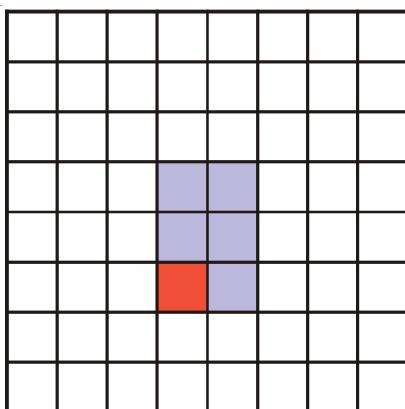
2) Shade in six more triangles so that this figure has rotational symmetry order 3



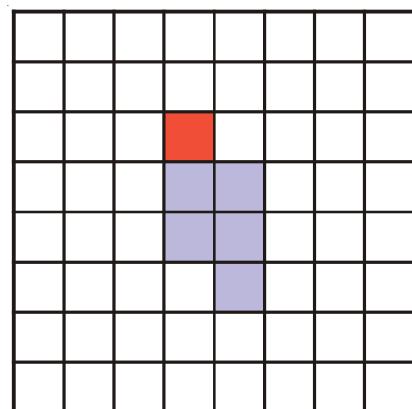
# G7 Rotational Symmetry

## Answers

- 1) a) Shade in one square so that this shape has rotational symmetry of order 2.

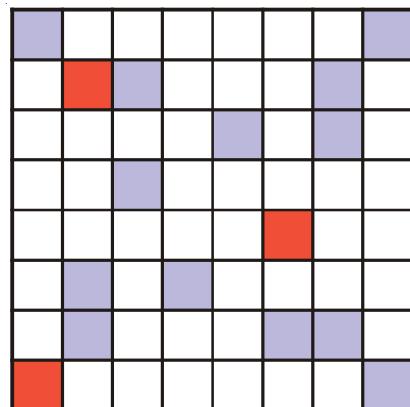


- b) Shade in a different square so that this shape has rotational symmetry of order 2.



*These are the  
two different  
answers*

- 2) Shade three more squares so that the grid has rotational symmetry of order 4.



- 3) Seven

*upside down*

*in the mirror*



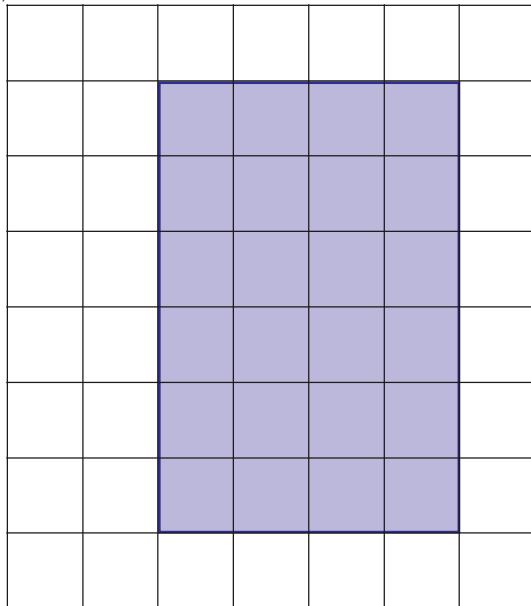
B, X, E, C, H, O, E can all be read the same

# G8a

Perimeters  
Counting Squares  
Answers

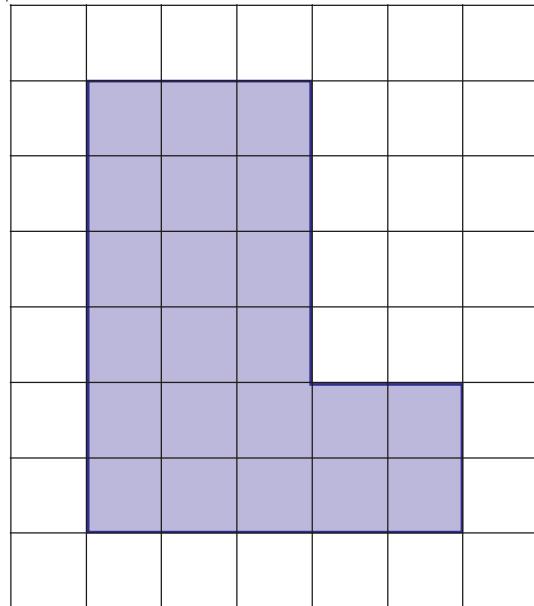
- 1) Find the perimeter of this rectangle on the cm grid.

$$P = 20\text{cm}$$



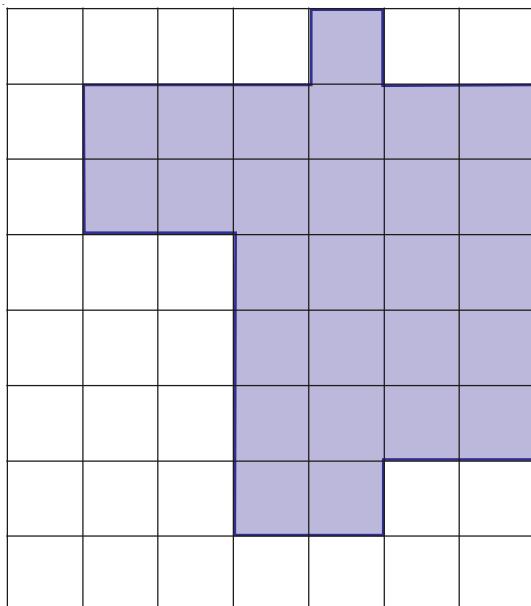
- 2) Find the perimeter of this shape on the cm grid.

$$P = 22\text{cm}$$



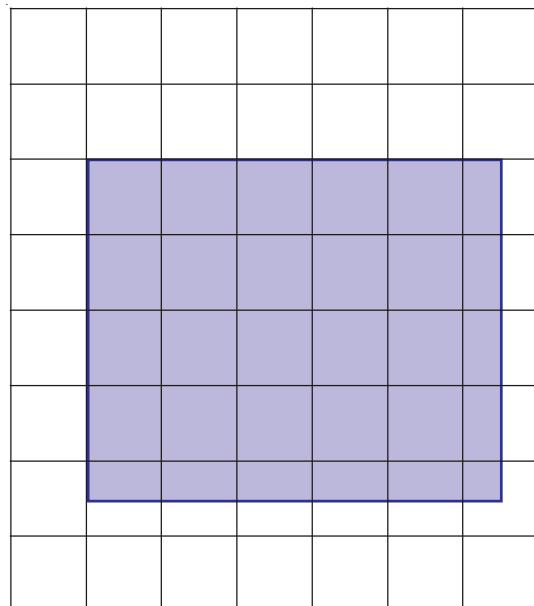
- 3) Find the perimeter of this shape on the cm grid.

$$P = 26\text{cm}$$



- 4) Find the perimeter of this shape on the cm grid.

$$P = 20\text{cm}$$

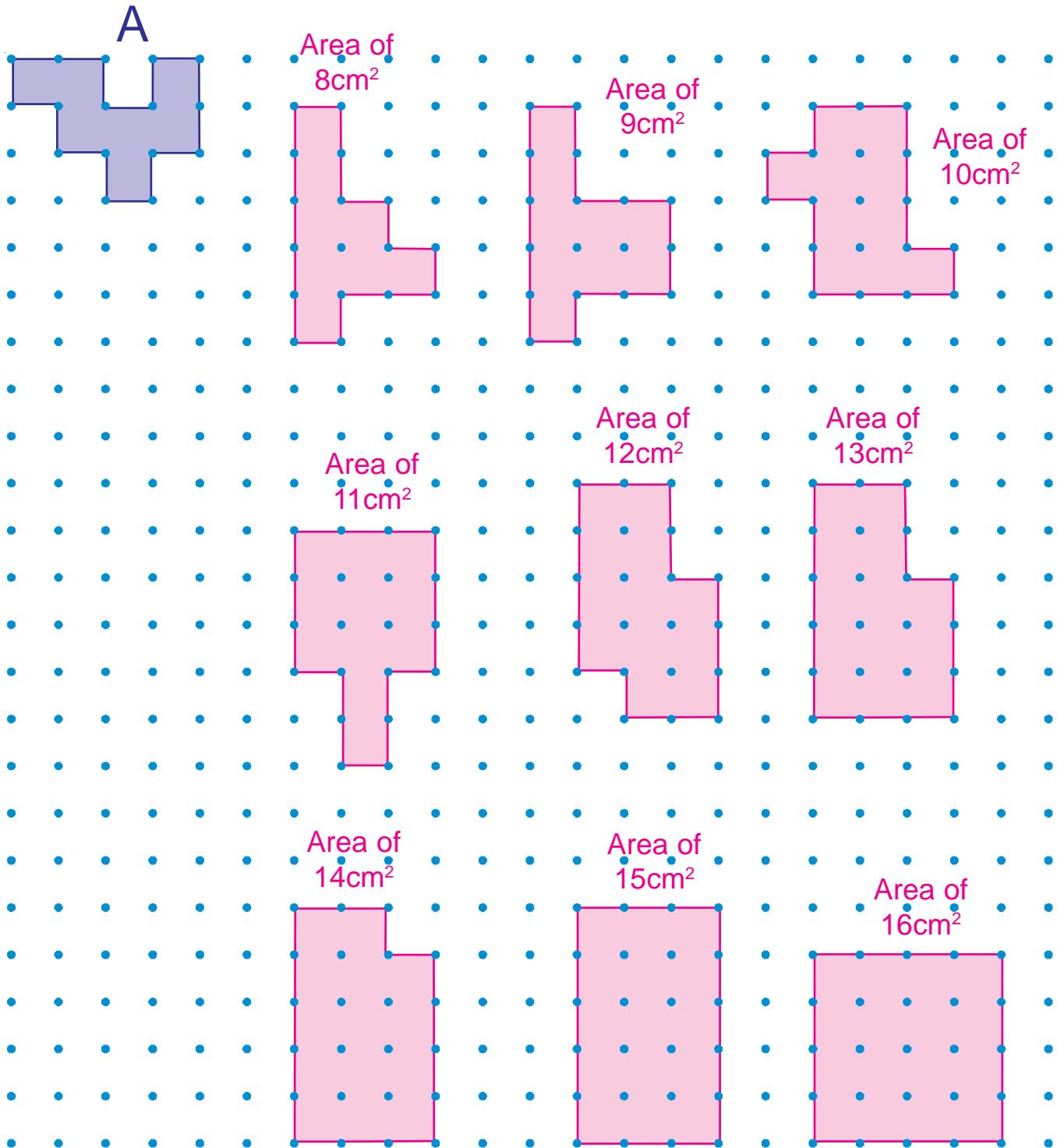


# G8a

Perimeters  
Counting Squares  
Answers

Perimeter = 16  
Area = 7 squares

There is more than one answer for some of the shapes.  
Here are some possible answers.

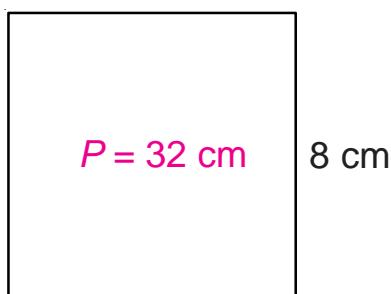


# G8b

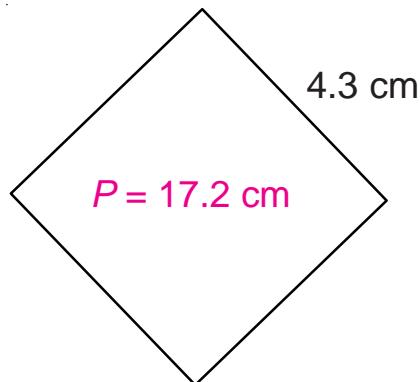
## Perimeters Using a Formula Answers

- 1) a) What is the formula for the perimeter of a square?  $P = 4L$   
b) Use your formula to find the perimeter of the following squares.

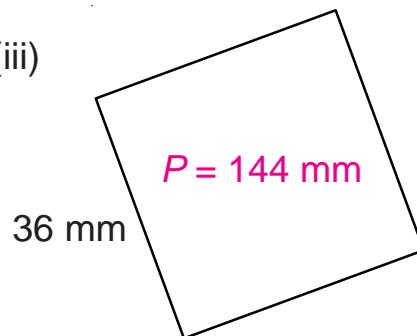
(i)



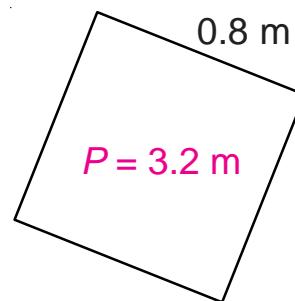
(ii)



(iii)

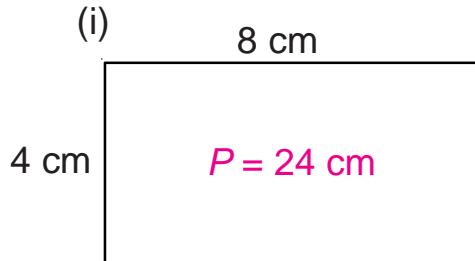


(iv)

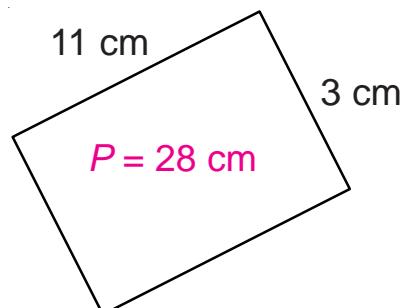


- 2) a) What is the formula for the perimeter of a rectangle?  $P = 2L + 2W$   
b) Use your formula to find the perimeter of the following rectangles.

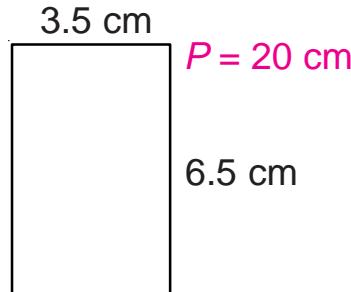
(i)



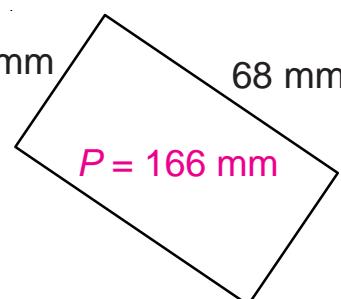
(ii)



(iii)



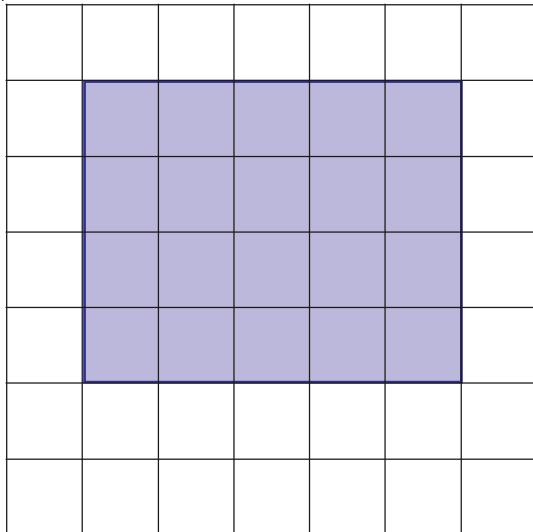
(iv)



# G9

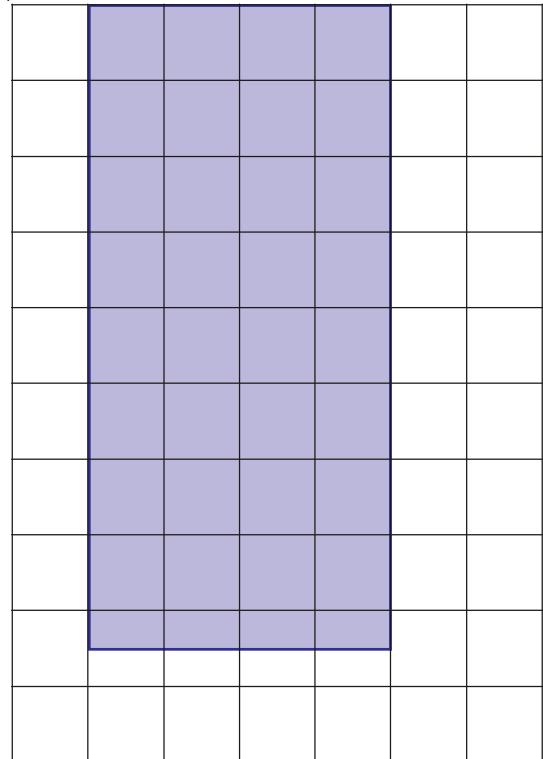
Areas  
Counting Squares  
Answers

- 1) Find the area of the rectangle on this centimetre grid.



$$\text{Area} = 20\text{cm}^2$$

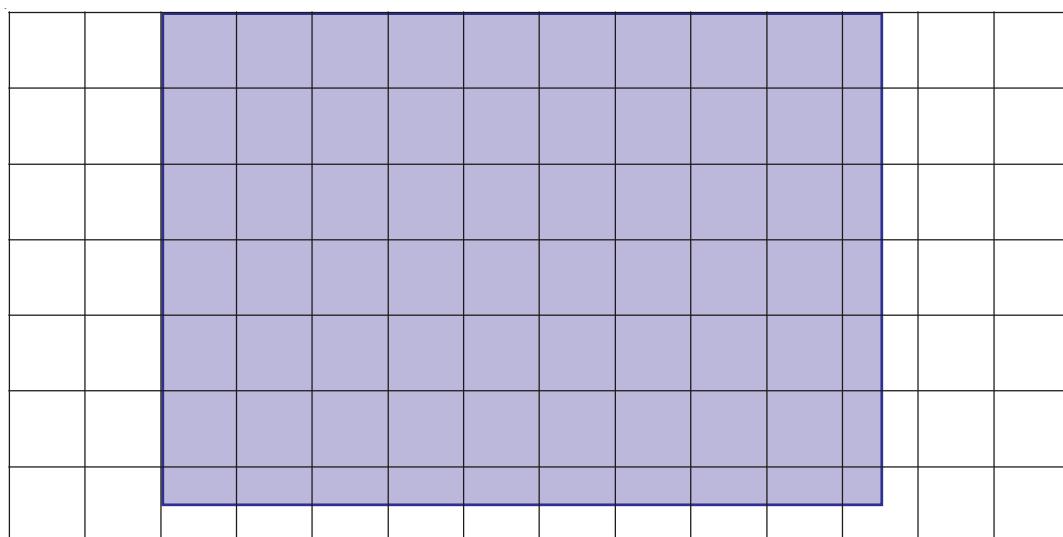
- 2) Find the area of the rectangle on this centimetre grid.



$$\text{Area} = 34\text{cm}^2$$

- 3) Find the area of the rectangle on this centimetre grid.

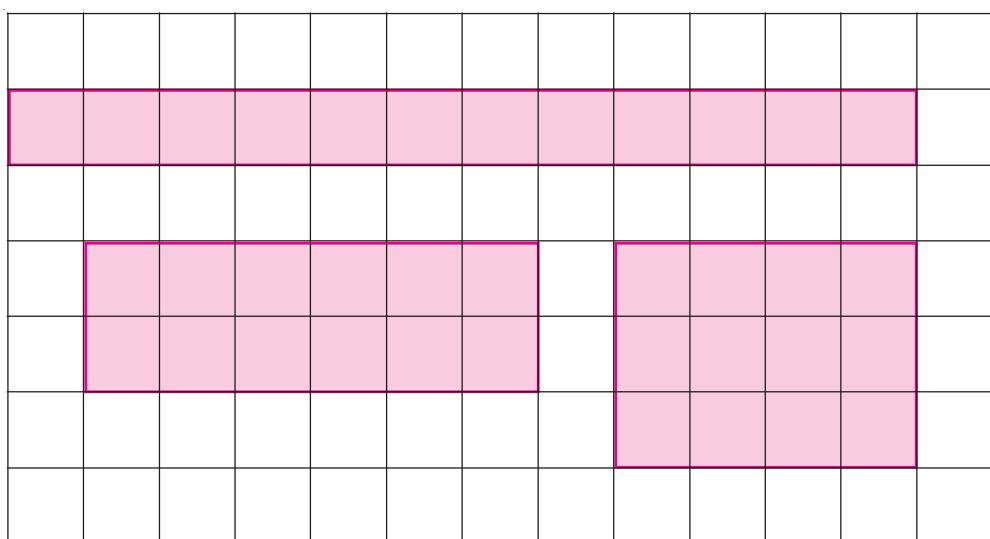
$$\text{Area} = 61.75\text{cm}^2$$



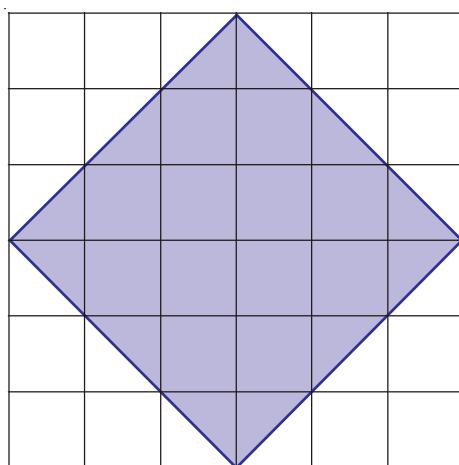
# G9

## Areas Counting Squares Answers

- 1) Draw three different-shaped rectangles with an area of  $12\text{cm}^2$  on the centimetre grid.



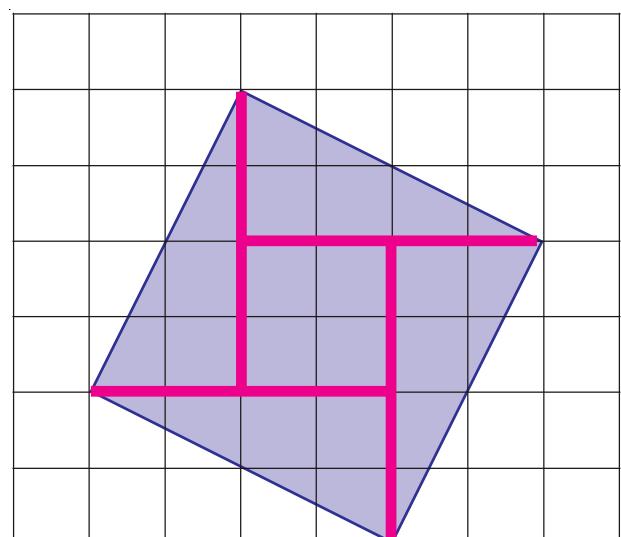
- 2) Find the area of the square on this centimetre grid.



Area =  $18\text{cm}^2$

*This is a difficult question*

- 3) Find the area of the square on this centimetre grid. **Area =  $20\text{cm}^2$**



# G10a

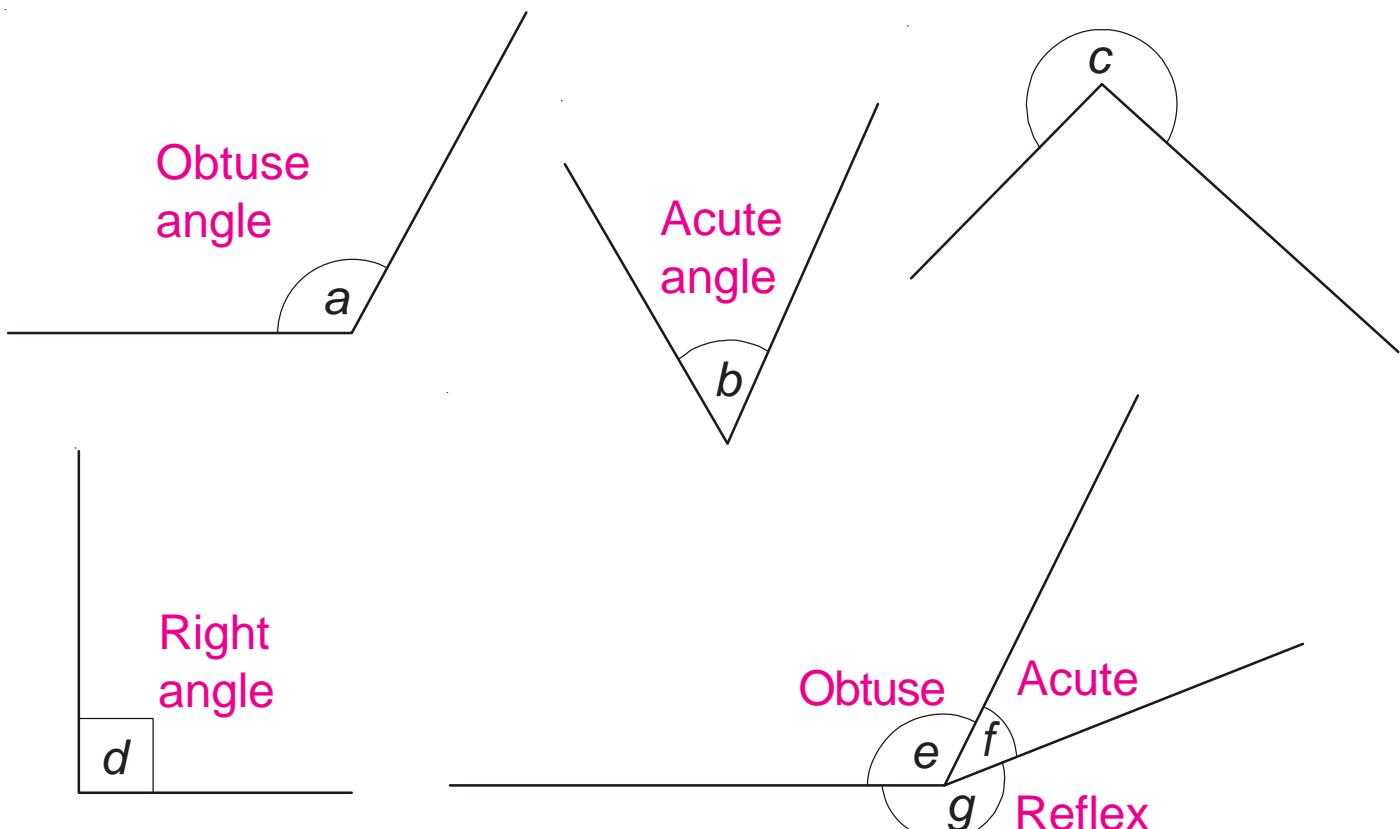
Measuring and Drawing Angles

Introduction

Answers

- 1) Each of the angles below can be described as an acute angle, an obtuse angle, a reflex angle or a right angle.  
Decide which each of them are.

Reflex angle



- 2) a) Draw a triangle which has three acute angles.



- b) Draw a triangle which has one obtuse angle and two acute angles.



- c) Draw a quadrilateral (4-sided shape) which has one reflex angle and three acute angles.



- d) Draw a quadrilateral which has one right angle, one acute angle and two obtuse angles.



- e) Draw a quadrilateral which has two obtuse angles and two acute angles.

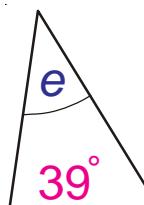
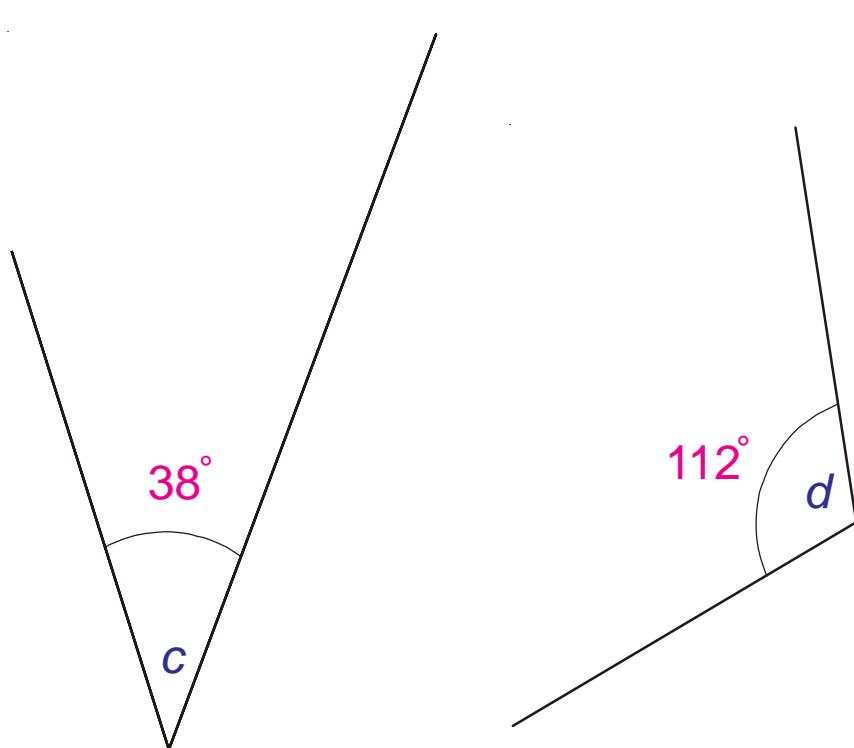
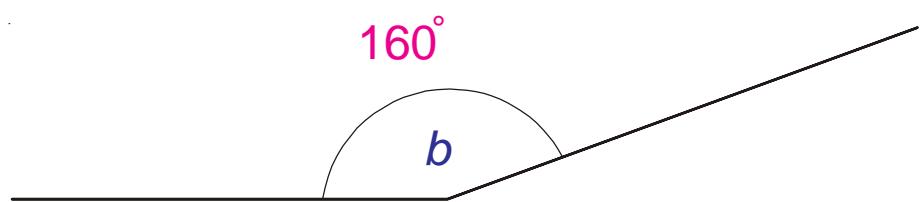
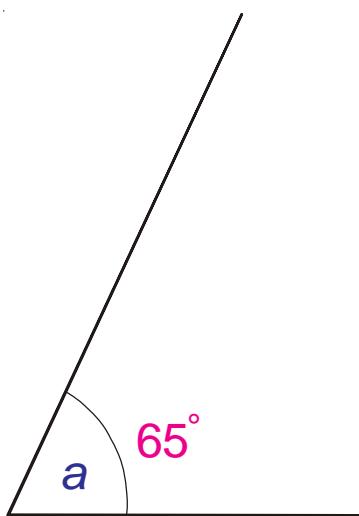


this is  
just one  
example

# G10b Measuring Angles

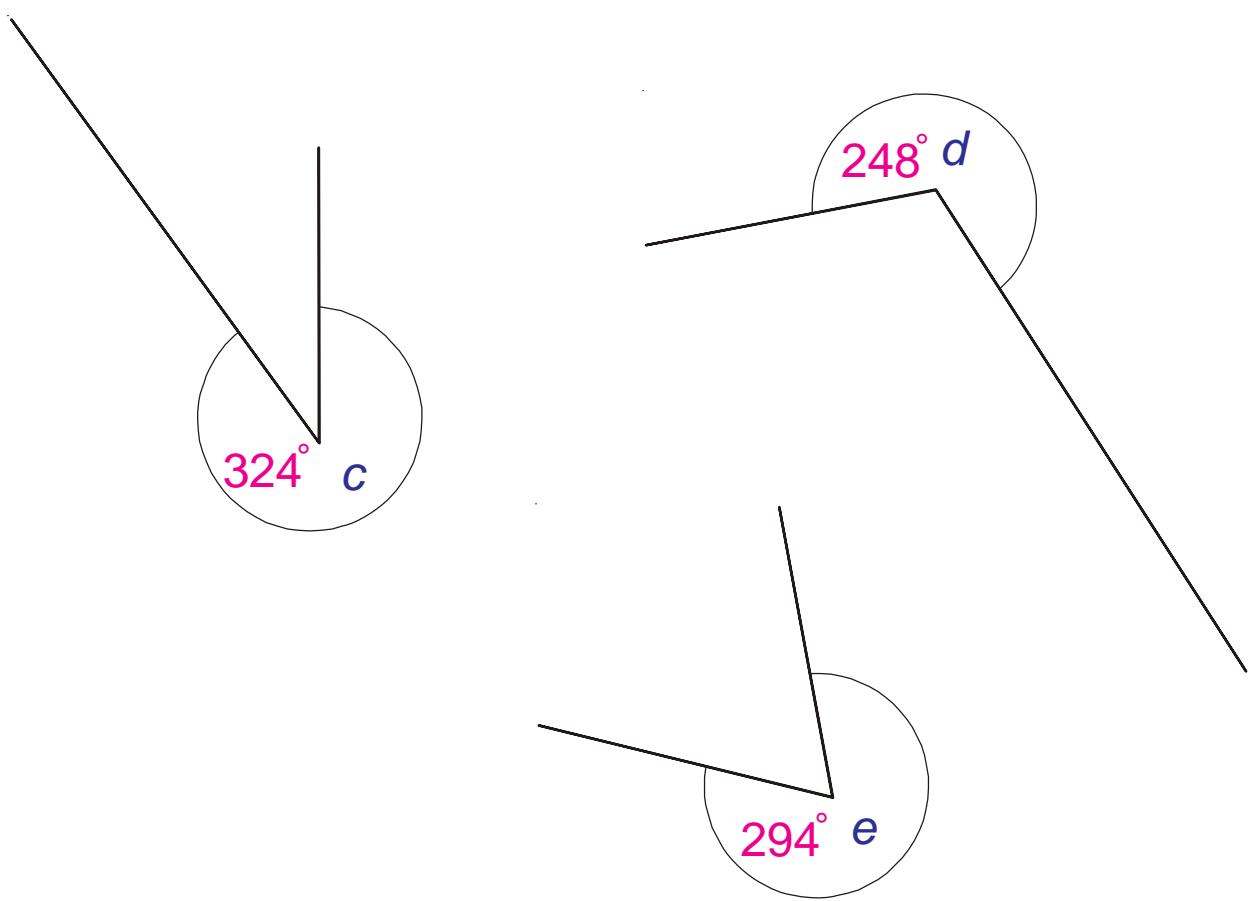
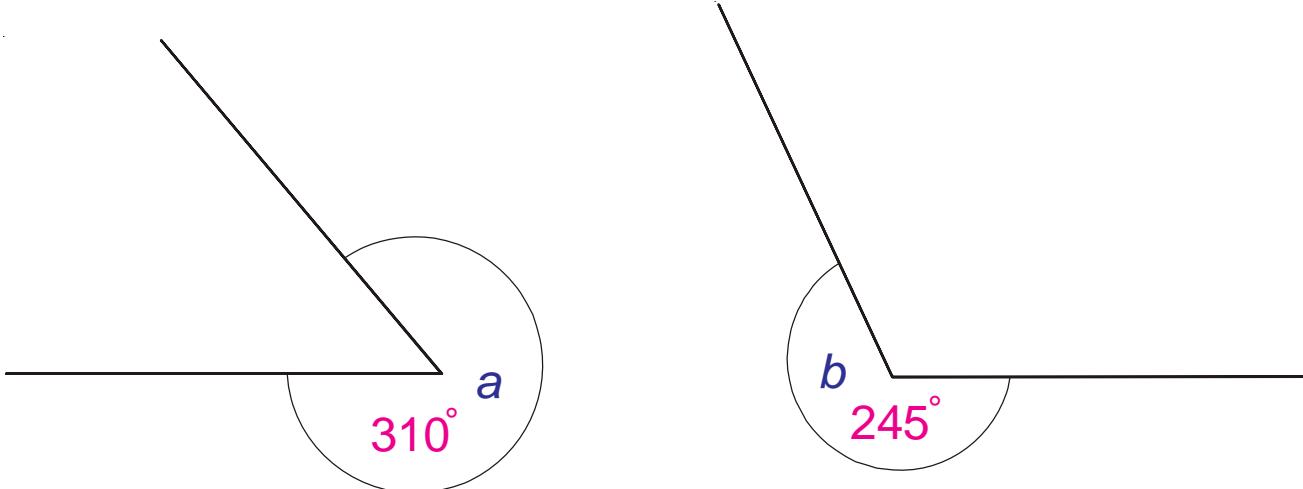
## Answers

Use a protractor to measure the angles below.



# G10b Measuring Angles Answers

Use a protractor to measure the angles below.



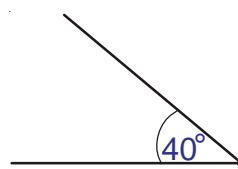
# G10c

## Drawing Angles Answers

Draw the angle where you see the dot.

Here is an example:

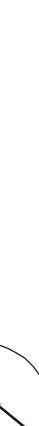
40°



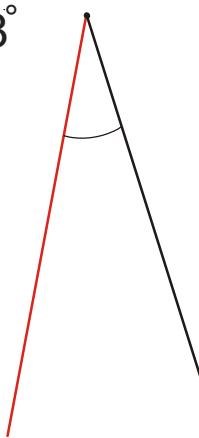
a) 70°



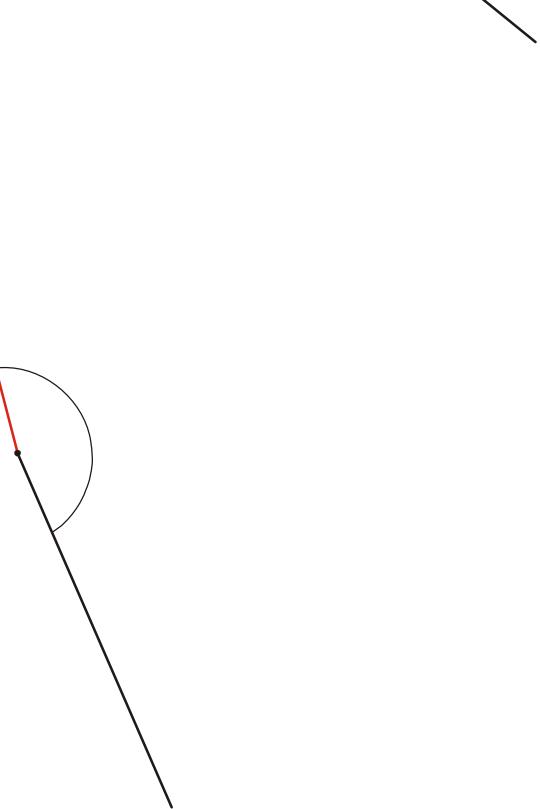
b) 135°



c) 28°



d) 171°

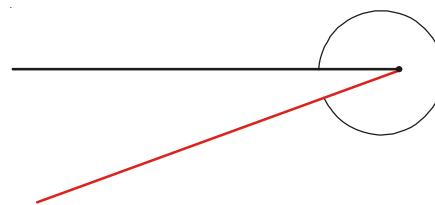


# G10c

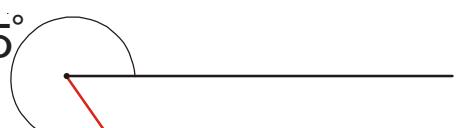
## Drawing Angles Answers

Draw the angle where you see the dot.

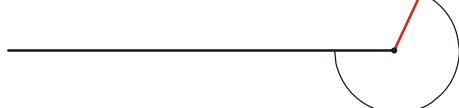
a)  $340^\circ$



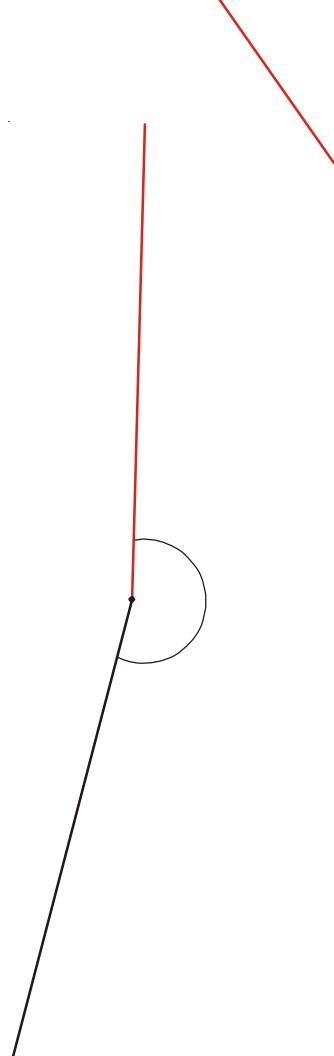
b)  $305^\circ$



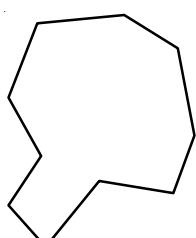
c)  $245^\circ$



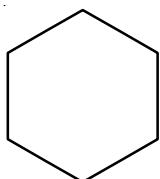
d)  $193^\circ$



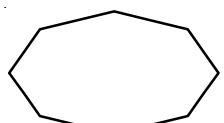
- 1) How many sides does a pentagon have? **5**
- 2) Give the two names for a 7-sided polygon **Septagon** and **Heptagon**
- 3) Match the shapes to the names



Decagon



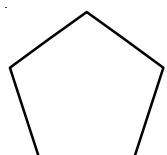
Regular hexagon



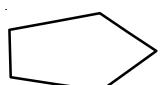
Octagon



Irregular hexagon

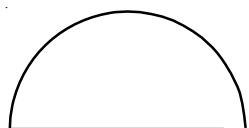


Regular pentagon



Irregular pentagon

- 4) Give two reasons why this diagram does not show a polygon.



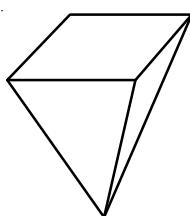
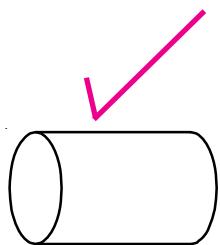
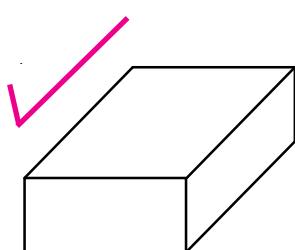
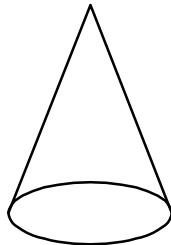
Not a closed shape  
Has a curve

# G12a

## 3D Shapes - Properties

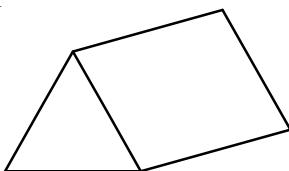
### Answers

- 1) Which of these shapes are prisms? Tick them.



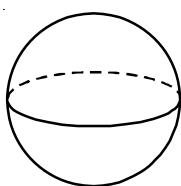
- 2) Write the names of these shapes.

a)



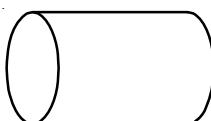
Triangular prism

b)



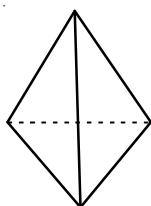
Sphere

c)



Cylinder

d)



Triangle-based pyramid

- 3) a) A prism has 5 faces, 9 edges and 6 vertices.

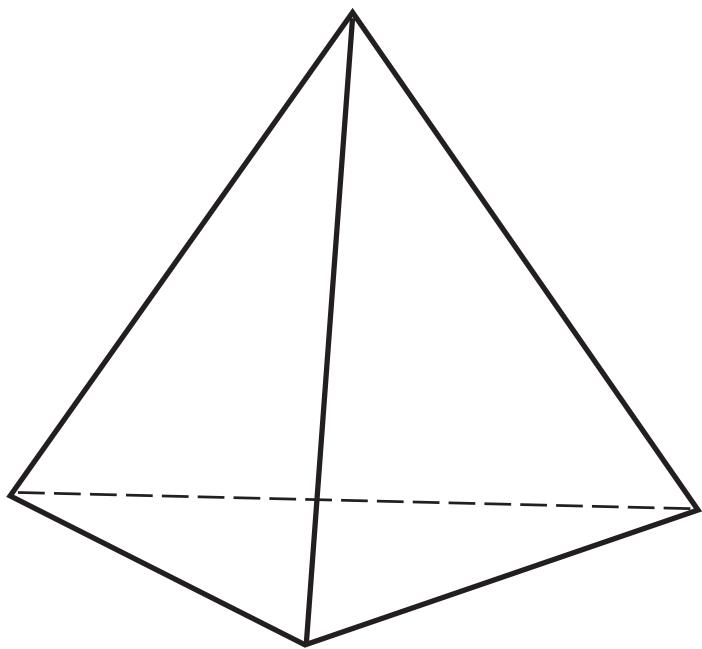
What is its name? **Triangular prism**

- b) A pyramid has 4 faces, 6 edges and 4 vertices.

What shape must its base be? **A triangle**

**G12b**

3D Shapes - Models  
*Answers*

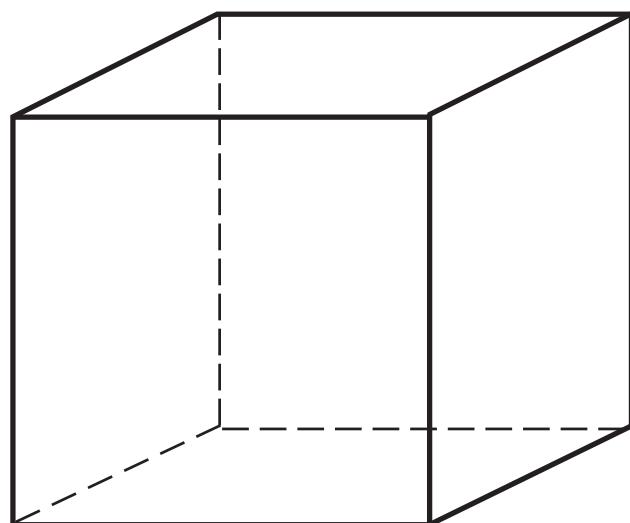


Tetrahedron

**G12b**

3D Shapes - Models

*Answers*

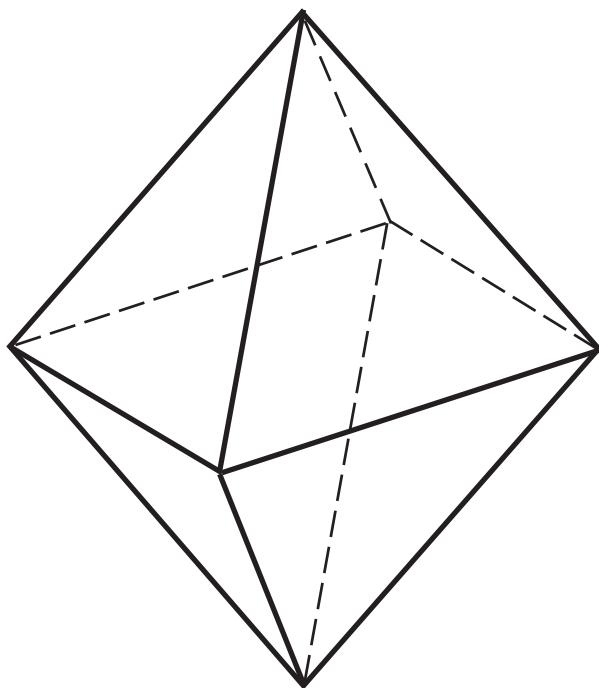


Cube

**G12b**

3D Shapes - Models

*Answers*

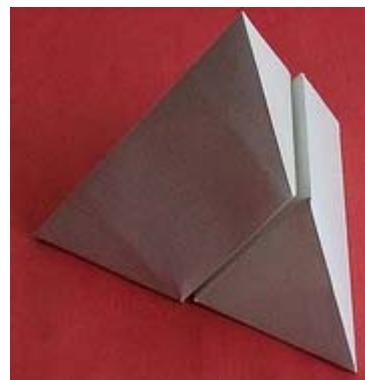


Octahedron

**G12b**

3D Shapes - Models

*Answers*



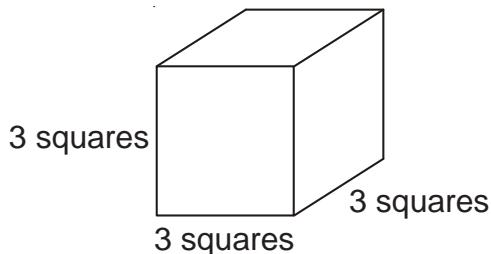
Shapes put together to  
make a tetrahedron

# G12c

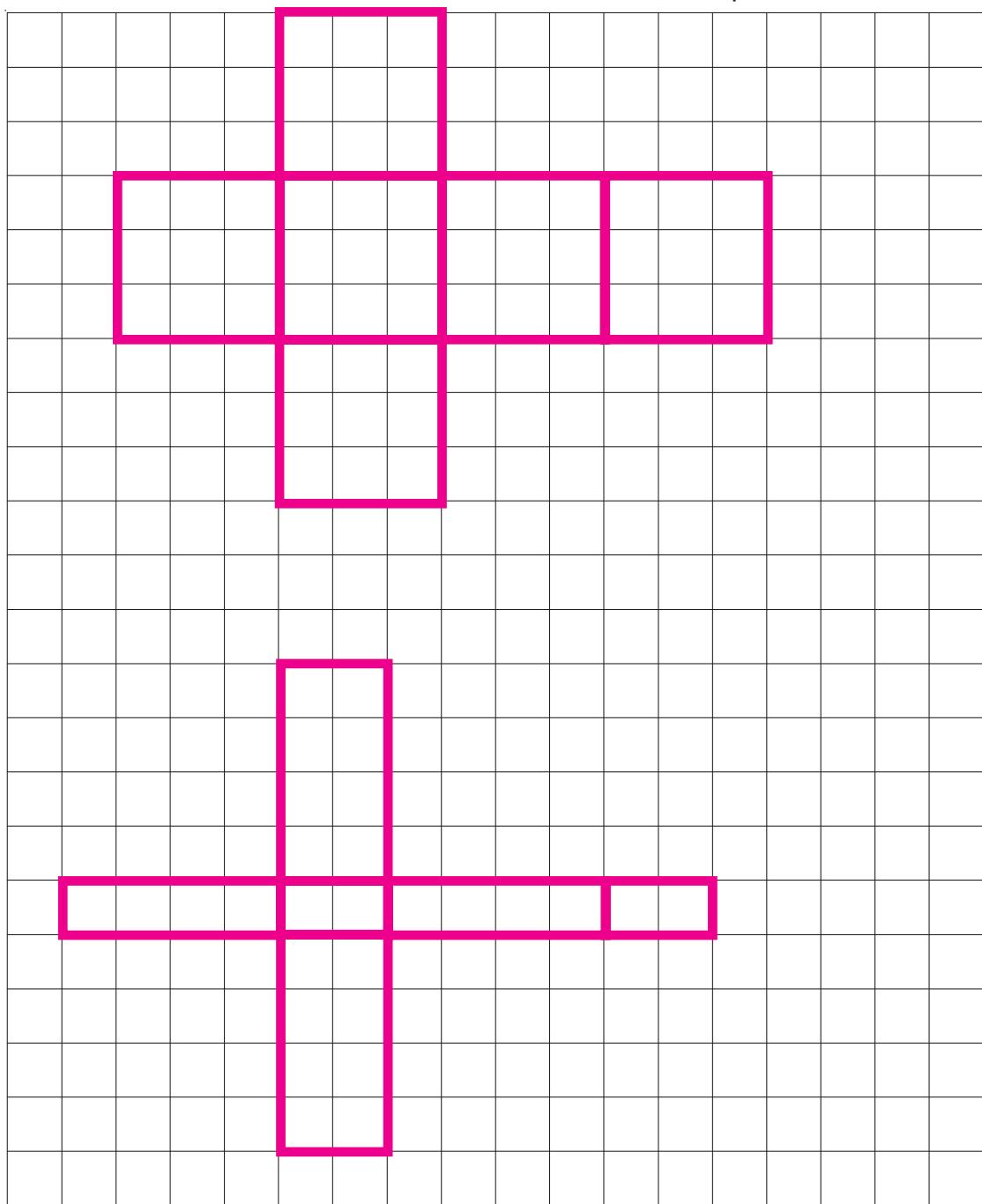
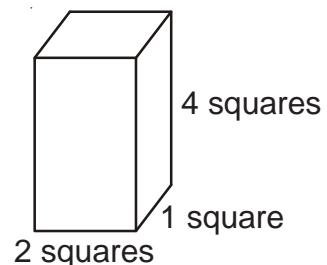
## 3D Shapes - Nets

### Answers

a) Draw a net of this cube.



b) Draw a net of this cuboid.



Estimate a probability (decimal) to go with these:

- a) You will be on time for school on the next school day.

Your teacher will need to check this answer.

- b) It will snow sometime this week.

This depends on what month it is and where you live.

- c) Your teacher will smile at least once tomorrow.

It might be better not to show your teacher this answer.

- d) You will have a disagreement with one of your friends.

Only you and your friends can check this.

- e) England will win the World Cup in 2018.

This is your opinion.

- f) England or France will win the World Cup in 2018.

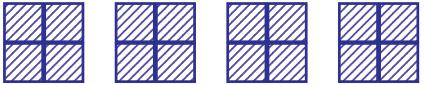
To be correct, this answer **must** be bigger than the answer to question e).

# S1a

## Pictograms - Interpreting Answers

An art gallery uses a pictogram to show the number of paintings sold over a 5 week period.

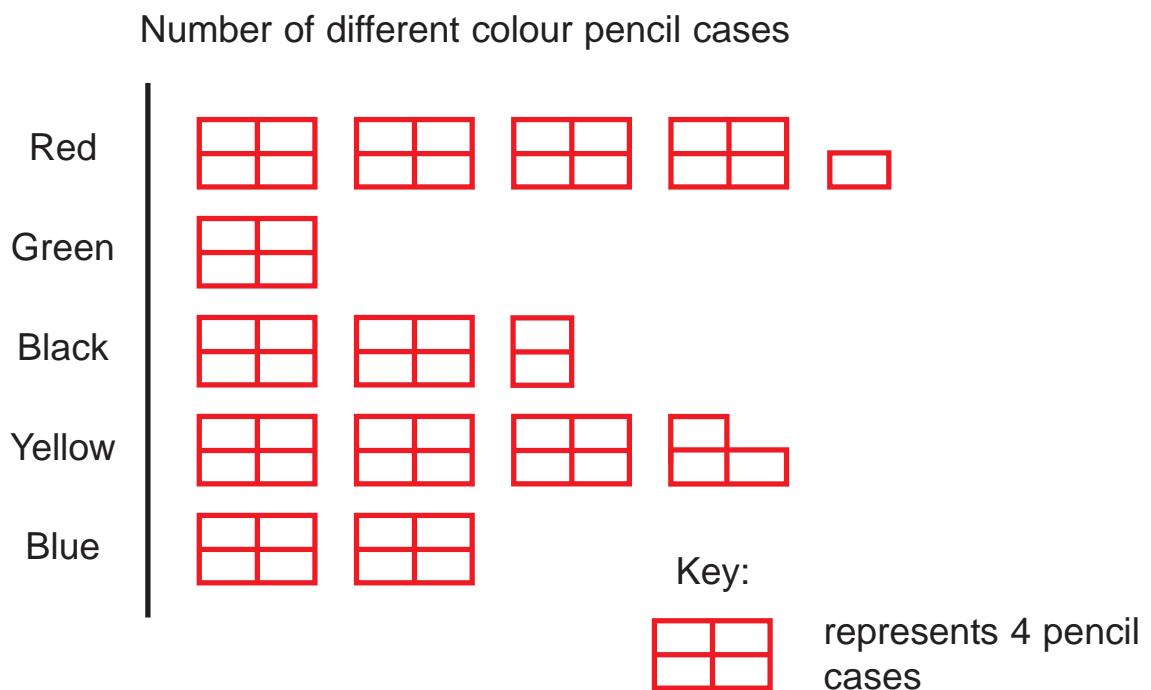
Key:  = 4 paintings

Week 1	
Week 2	
Week 3	
Week 4	
Week 5	

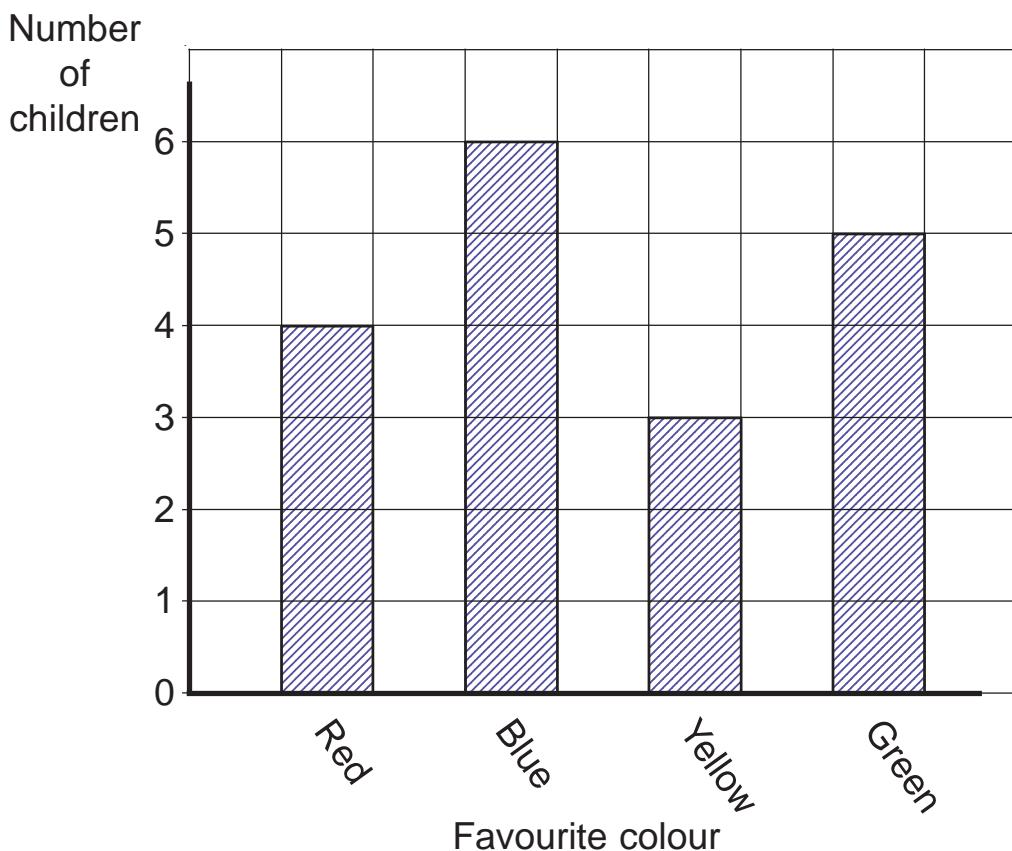
- How many paintings were sold in week 1? **12**
- In which week was the least number of paintings sold? **Week 5**
- How many paintings were sold in week 3? **10**
- How many paintings were sold in week 4? **7**
- How many more paintings were sold in week 2 compared with week 5? **12**
- How many paintings were sold altogether in the five weeks? **49**

# S1b

## Pictograms - Drawing Answers

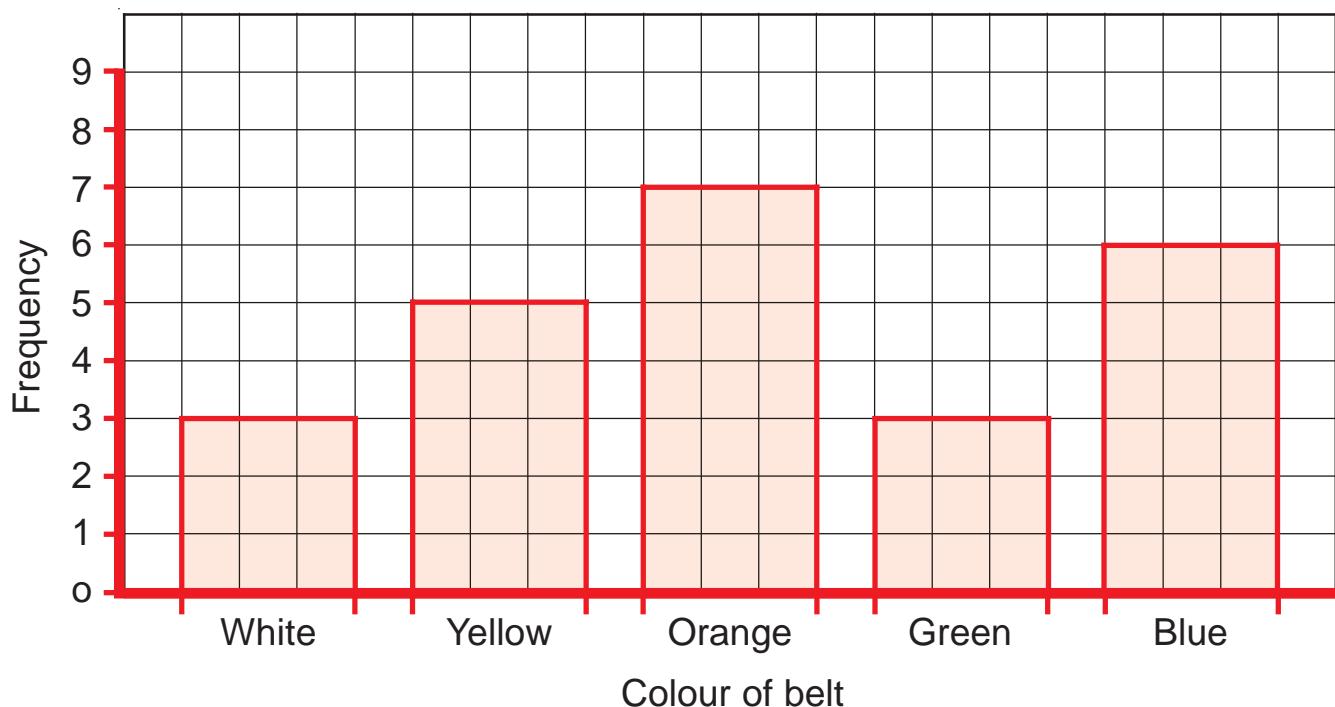


Bar chart to show favourite colour of all pupils in class 5A



- a) How many children chose green as their favourite colour? **5**
- b) Which was the least favourite colour in the class? **Yellow**
- c) How many more children chose blue than red? **2**
- d) How many children are in class 5A? **18**

Number of different colour belts in a Judo club



**S3**

Frequency Tables  
Ungrouped Data  
Answers

1)

Colour	Tally	Total
Blue		7
Green		9
Red		11
Yellow		3

2)

No. of children	Tally	Total
1		7
2		12
3		6
4		4
5		1
6		1

3)

Pets	Tally	Total
Dog		11
Cat		10
Hamster		13
Goldfish		8
Snake		2

**S3**

Frequency Tables  
Ungrouped Data  
*Answers*

MANY YEARS AGO IN A FAR-OFF LAND THERE LIVED AN  
OGRE OF HUGE PROPORTIONS.

HIS FAVOURITE OCCUPATION WAS TO CAPTURE POOR  
PEASANTS AND MAKE THEM WORK FOR FREE ON HIS LAND.  
HE WASN'T VERY NICE.

THE NAME OF THE OGRE WAS LANCE.