1st December	**Foundation 5-a-day**
Given that 14.5 x 34 = 493 Write down the value of 14.5 x 17 $493 \div 2 = 246.5$	Write down the value of $49.3 \div 14.5$ 3.4
Write $\frac{11}{2}$ as a mixed number $5\frac{1}{2}$	
A bus leaves Derby Bus Station every 10 minutes. A train leaves Derby Train Station every 16 minutes. At 9am a bus and a train leave the stations at the same time.	When is the next time that a bus and train leave at the same time? 10 20 30 40 50 60 70 (80) 16 32 48 64 (80) 80 min = 1hr 20 min 10:20am.
Find the nth term of 2, 11, 20, 29, ... -7 (9 18 27 36 9n $9n - 7$	
Kelly buys a 2 week holiday to California in March for £1800. Jenny buys a 2 week holiday to California in July for $4219.60 Given £1 = $1.54	Find how much more Jenny pays for her holiday. $4219.6 \div 1.54 = 2740$ $2740 - 1800 =$ £940

2nd December **Foundation 5-a-day**

Nathan buys y apples at 15 pence each.

Write an expression for the total cost in terms of y.

$15y$

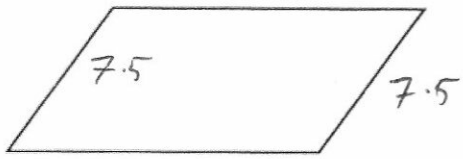
Solve $4w = 20$

$w = 5$

Solve $3y + 2 = 17$

$3y = 15$

$y = 5$



The perimeter of this parallelogram is 50cm

The length of each short side is 7.5cm. Calculate the length of each long side.

$7.5 + 7.5 = 15$

$50 - 15 = 35$

$35 \div 2 = 17.5\text{cm}$

The two-way table shows the grades students in Year 10 received in their exams.

How many students are in Year 10?

42

Physics

Maths	A	B	C	D
A	(7)	6	1	1
B	3	(5)	3	0
C	4	2	(6)	3
D	0	0	1	0

How many students got the same grade in maths and physics?

$7 + 5 + 6 = 18$

Name: _____ 5-a-day Foundation

3rd December

Victoria is travelling North-East.

Write her direction of travel as a three figure bearing.

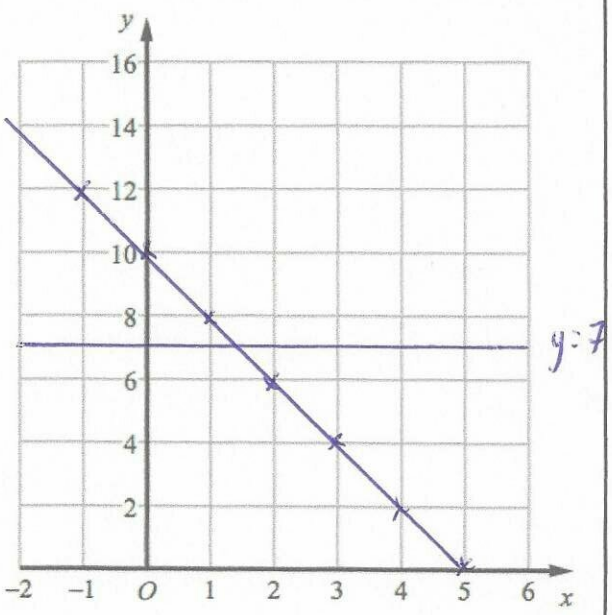
045°

Write 40.5% as a fraction
Give your answer in its simplest form.

$\frac{40.5}{100} = \frac{405}{1000}$

$\frac{81}{200}$

On the grid, draw y = 7



On the grid draw the graph of
y = 10 – 2x for the values of
x from –1 to 5.

x	-1	0	1	2	3	4	5
y	12	10	8	6	4	2	0

A map has a scale of 1cm represents 2km. 2km = 2000m = 200000cm

Write this scale as a ratio in its simplest form.

1 : 200000

4th December **Foundation 5-a-day**

Solve $y - 3 = 9$

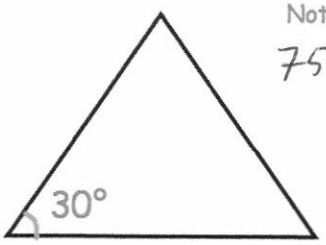
$y = 12$

Write down the next two terms in this sequence

1 5 9 13 17 21

Is 200 a term in this sequence?
Explain your answer.

No, it is even



Not drawn accurately

75° & 75°

or

30° & 120°

Shown is an isosceles triangle.

Work out the possible sizes of the other two angles.

Give two different possible pairs

30° and 30° and 120°

30° and 75° and 75°

Work out the mean number of phones owned

$23 \div 10 = 2.3$

2.3

Number of phones	Frequency			
0	X	1	=	0
1	X	3	=	3
2	X	2	=	4
3	X	0	=	0
4	X	4	=	16
5	X	0	=	0
		10		23

5th December **Foundation 5-a-day**

A standard box of cereal contains 480g of cereal.

A smaller box contains $\frac{1}{3}$ less cereal.

$480 \div 3 = 160$

$480 - 160 = 320g$

How much cereal does the smaller box contain?

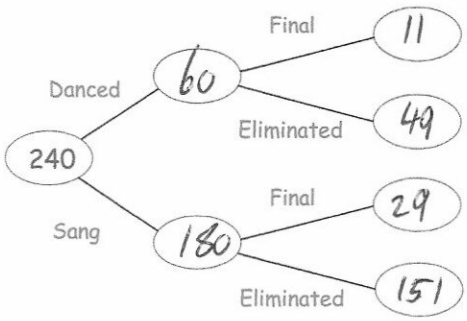
240 acts took part in a talent show.

25% of the acts danced and the rest sang.

40 acts made it through to the final.

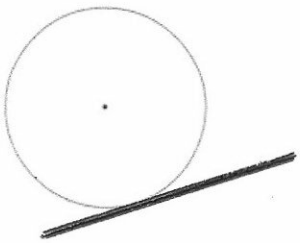
29 of the acts that sang made it to the final.

Complete the frequency tree.



What fraction of the acts made it through to the final?

$\frac{40}{240} = \frac{1}{6}$



Draw a tangent to the circle

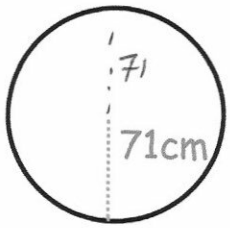
Leo runs 2 kilometres in 2 minutes.
Calculate his average speed.
Give your answer in m/s

2000 m in 120 secards

$2000 \div 120 =$

16.67 m/s

6th December	**Foundation 5-a-day**
Mr and Mrs Jones have two children. One of their children is 13 years old. The range of their ages is 8 years. What are the possible ages of the other child?	13 - 8 = 5 or 13 + 8 = 21
A blue light flashes every 6 seconds. A green light flashes every 4 seconds. They have both just flashed at the same time. 6 12 4 8 12	After how many seconds will they both flash at the same time? 12
Round 45.5247 to 2 decimal places 45.52	
A car travels 105 miles in 150 minutes. → 2.5 hrs Calculate the speed of the car.	105 ÷ 2.5 42 mph
The probability of a student at Mayfield High being left handed is 0.12 1300 pupils go to Mayfield High.	How many pupils at Mayfield High are left handed? 1300 x 0.12 = 156

7th December	**Foundation 5-a-day**
–3 x 5 -15	–8 x –2 16
Work out ⅛ of 28 $28 \div 8 = 3.5$ 14 7 3.5	
Simplify 8y – 2y $6y$	Simplify 6w + 3y + 4w + y $10w + 4y$
Calculate the circumference $\pi \times d$ $\pi \times 142 = 446.1\text{cm}$	$d = 142$ 
Write an equation with 11 as its solution. $9x + 1 = 100$	

8th December **Foundation 5-a-day**

Work out 12^4

$12^2 = 144$

$12 \times 12 \times 12 \times 12$

$144 \quad 144$

144
× 144
576
5760
+ 14400
20736

20736

0.16 14% $\frac{3}{20}$ 0.2 9%

16% 15% 20%

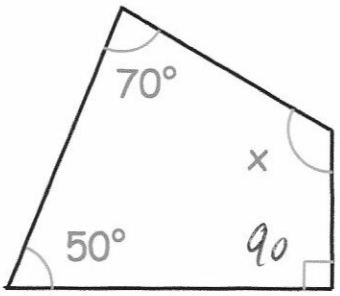
Write these numbers in order of size.
Start with the smallest number.

9% 14% $\frac{3}{20}$ 0.16 0.2

Find x

$50 + 70 + 90 = 210$

$360 - 210 = 150°$

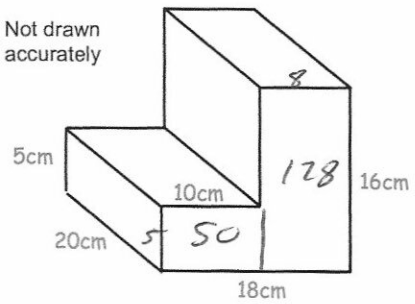


$\frac{4}{5}$ of y is 20.

Find the size of y.

$20 \div 4 = 5$

$5 + 5 = 25$



Calculate the volume

$50 + 128 = 178$

$178 \times 20 = 3560 cm^3$

9th December **Foundation 5-a-day**

A piece of wire 45cm long is cut into six equal pieces.

What is the length of each piece?

$$6\overline{)45.^{3}0}\quad 07.5$$

7.5cm

Simplify $9 \times c \times d \times 4$

36cd

Rosie has 12 counters.

Bethan has 3 bags of counters. There are 50 counters in each bag. 150

Find the ratio of the number of counters Rosie has to the number of counters Bethan has.

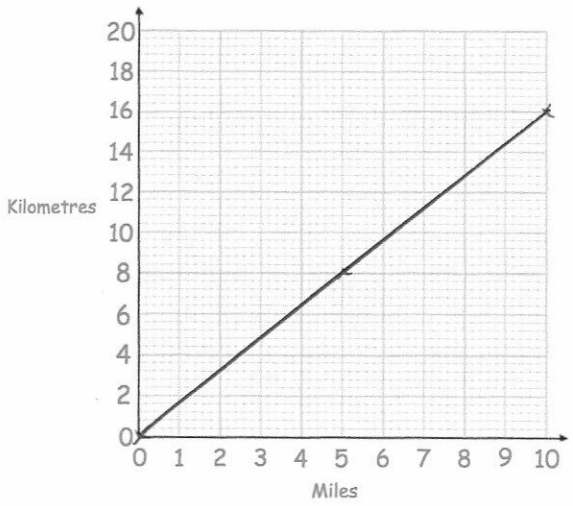
12 : 150

6 : 75

2 : 25

5 miles = 8 kilometres

Use this information to draw a conversion graph.



A car travels at 60km/h

Convert this to miles per hour.

8 km ≈ 3.75 miles

37.5 mph

10th December **Foundation 5-a-day**

Work out 20% of 70

10% = 7

20% = 14

14

In a furniture shop, a table comes with six chairs.

Which of the formulae below connects the number of tables, T, and the number of chairs, C?

Formula 1: C = T + 6

Formula 2: C = 6T

Formula 3: T = 6C

Formula 4: T = C + 6

Megan has £15.
She is going to choose one starter, one main and one dessert.
List all the possible combinations that Megan can afford.

Starter		Main		Dessert	
Soup	£2.50	Chicken	£6.25	Trifle	£3.50
Prawns	£4.25	Beef	£8.00	Brownie	£4.00
Melon	£3.50	Pork	£7.50	Eton Mess	£4.50

Not
PBT PPT MBB
PBB PPB MBE
PBE PPE MPE

SCT = £12.25
SCB = £12.75
SCE = £13.25
SBT = £14
SBB = £14.50
SBE = £15
SPT = £13.50
SPB = £14
SPE = £14.50
PCT = £14
PCB = £14.50
PCE = £15
MCT = £13.25
MCB = £13.75
MCE = £14.25
MBT = £15
MPT = £14.50
MPB = £15

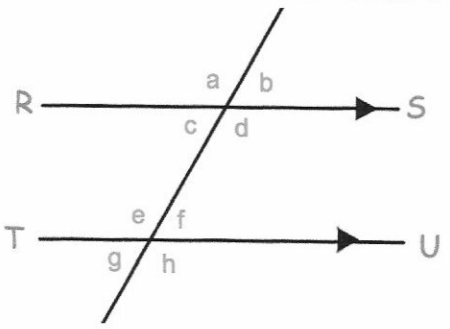
A circle has a diameter of 3cm.

Find the circumference of the circle.

$C = \pi \times d$

$C = \pi \times 3$

9.42cm

11th December	**Foundation 5-a-day**
Work out $180 - 2 \times 5^2$ $180 - 2 \times 25$ $180 - 50$ 130	
Work out $\frac{4}{5} - \frac{1}{3}$ $\frac{12}{15} - \frac{5}{15} = \frac{7}{15}$	
Which angle is vertically opposite to angle g ? f	
Jack completes a journey in 2 stages. In stage 1, Jack drives at 60 mph for 1 hour 45 minutes. — 1.75 hrs How far does he travel in stage 1?	$60 \times 1.75 = 105$ miles
Altogether Jack travels 120 miles in 2 hours 30 minutes. What is his average speed in stage 2? $120 - 105 = 15$ miles 45 minutes	[redacted] $15 \div 0.75 = 20$ mph

12th December **Foundation 5-a-day**

The probability of snow is 0.03

Work out the probability that it will not snow.

$1 - 0.03$

0.97

$55+35+20+60+15 = 185$

Work out the mean

$185 \div 5 = 37$

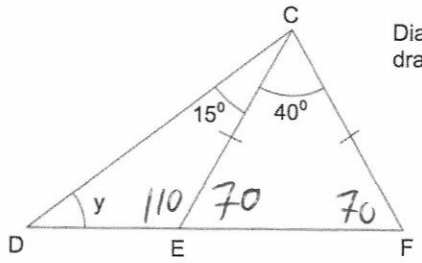


Diagram not drawn accurately

$180 - 70 = 110$

Find the size of angle y

$180 - 40 = 140$

$140 \div 2 = 70$

$110 + 15 = 125$

$180 - 125 = 55°$

Make y the subject of $c = 2y + a$

$c = 2y + a$

$c - a = 2y$

$y = \frac{c-a}{2}$

Poppy walks 11 kilometres at a speed of 4 km/h

Calculate how long it takes Poppy.
Give your answer in hours and minutes.

$11 \div 4 = 2.75$

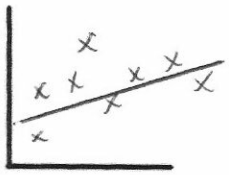
2 hours 45 mins

13th December **Foundation 5-a-day**

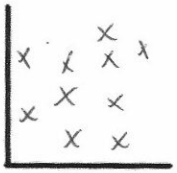
Florence has £1.80
Tameka has £3

How much money should Tameka give Florence so they have the same amount?

$300 - 180 = 120$
$120 \div 2 = 60p$



Plot some points that would have a positive correlation



Plot some points that would have no correlation

Work out 845×129

$$\begin{array}{r} 845 \\ \times\ 129 \\ \hline 7605 \\ 16900 \\ +\ 84500 \\ \hline 109005 \end{array}$$

109005

Here are the *n*th terms of 4 sequences.

Sequence 1	nth term	3n + 1
Sequence 2	nth term	5n + 10
Sequence 3	nth term	10n
Sequence 4	nth term	5n - 1

For each sequence state whether the numbers in the sequence are

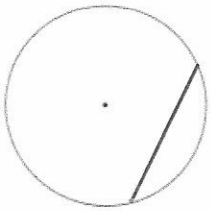
A	Always multiples of 5
S	Sometimes multiples of 5
N	Never multiples of 5

4 7 10
=
Sequence 1 ..... S .....

Sequence 2 ..... A .....
15 20 25

Sequence 3 ..... A .....
10 20 30

Sequence 4 ..... N .....
4 9 14

14th December	**Foundation 5-a-day**
There are 8 green pens, 3 red pens and 5 black pens in a pot. One pen is picked at random. Write down the probability that the pen is black.	$8+3+5=16$ $\frac{5}{16}$
	Draw a chord
Harry normally works 30 hours per week. His normal rate of pay is £9 per hour. When Harry works more than 30 hours per week, he is paid overtime for each extra hour. His overtime pay is 20% more than his normal pay. Last week Harry worked 35 hours. Work out his total pay.	30 hours at normal pay 5 hours overtime. $30 \times 9 = £270$ £9 - normal pay 10% = 90p 20% = £1.80 £9 + £1.80 = £10.80 $5 \times 10.8 = £54$ $270 + 54 = £324$
Write 200 as a product of primes. 2 100 2 50 2 25 5 5	$2 \times 2 \times 2 \times 5 \times 5$ $2^3 \times 5^2$

15th December **Foundation 5-a-day**

What is the order of rotational symmetry of a rectangle?

2

29 32 32 12 11

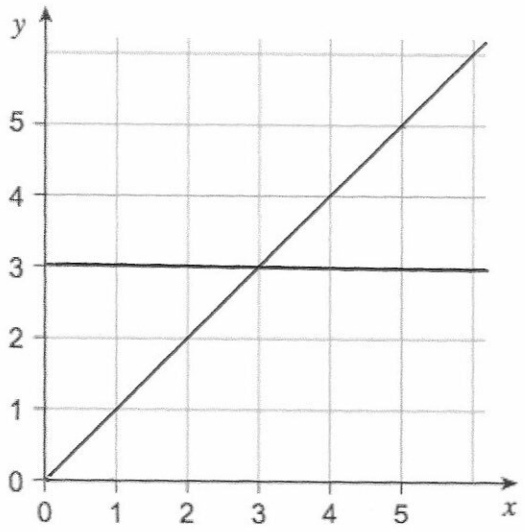
Work out the median

11 12 (29) 32 32

29

Write down the mode

32



Draw y = 3

Draw y = x

x	0	1	2
y	0	1	2

Ali cycles 8 kilometres in 30 minutes.

Calculate his average speed, in km/h.

8 km in 30 min

16 km in 1 hr

16 km/h

16th December **Foundation 5-a-day**

Write 8.7 to the nearest whole number.

9

Write 3.483 correct to 1 decimal place.

3.5

1.825 ÷ 5

$$5\overline{)1.8^{3}2^{2}5} \quad 0.365$$

0.365

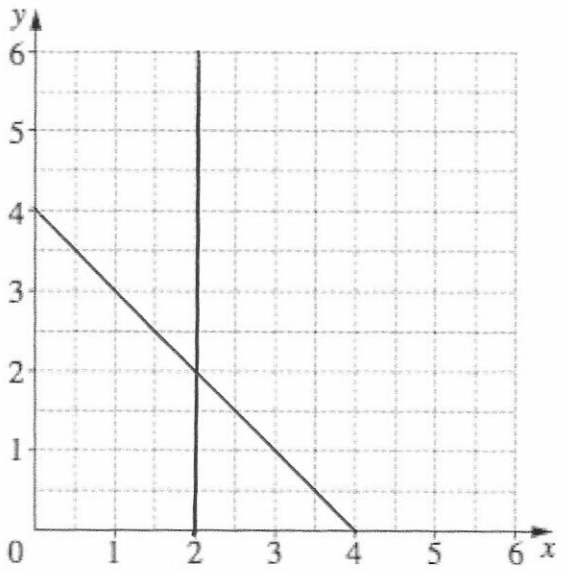
Circle the correct word to describe

$2x + 7 = 15$

Equation Expression Identity

Draw x = 2

Draw x + y = 4



Name: _____ 5-a-day Foundation

17th December

Victoria is travelling South-East.

Write her direction of travel as a three figure bearing.

135°

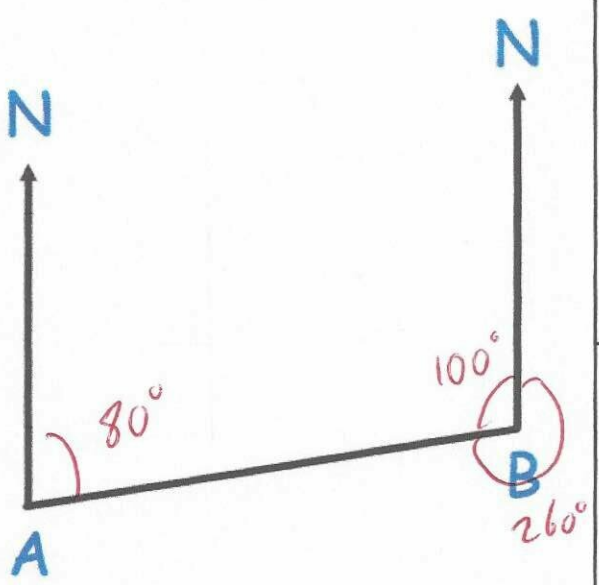
A pigeon flies for 7 hours at a speed of 45 km/h.

Calculate how far the pigeon flies.

$d = s \times t$

$= 45 \times 7$

$= 315$ km



Write down the three figure bearing of B from A

080°

Write down the three figure bearing of A from B

260°

Six students sit an exam.
Here are the marks of five of the students

70 + 65 + 85 + 91 + 75 = 386

The mean for the six exams is 80

Work out the mark for the sixth exam.

$6 \times 80 = 480$

$480 - 386 = 94$

18th December **Foundation 5-a-day**

The cost of 9 coffees is £20.25

Find the cost of 1 coffee.

$$9\overline{)20^{2}2^{4}5} = 2.25$$

£2.25

Find the cost of 4 coffees.

$$2.25 \times 4 = 9.00$$

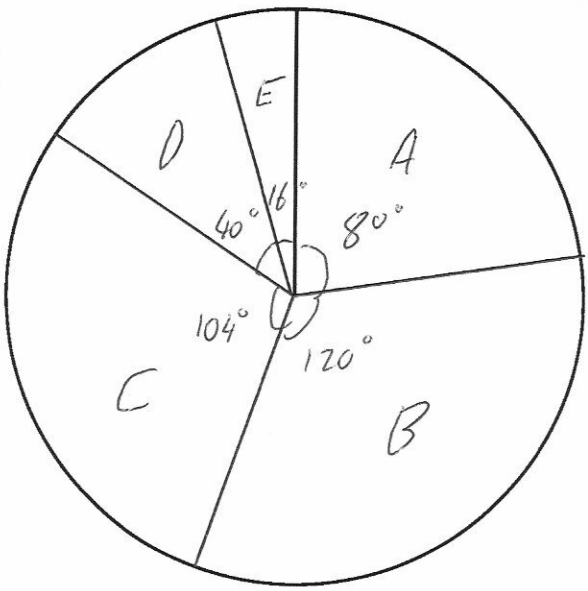
£9

The table below shows information about the grades received in a test.

Grade	Frequency	
A	10 × 8	80°
B	15 × 8	120°
C	13 × 8	104°
D	5 × 8	40°
E	2 × 8	16°
	45	

Draw a pie chart to show this information.

360 ÷ 45 = 8

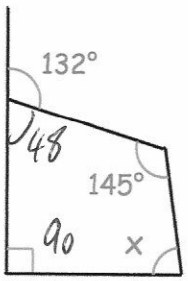


Find x

48 + 145 + 90 = 283

360 − 283 = 77°

180 − 132 = 48



Candles normally cost £9 each.

Two websites have special offers

Corbettmaths Candles	Candles'R'us
Buy 3 get 1 free	20% off
pay for 30 & 10 free	40 × 9 = 360
30 × 9 = £270	10% = 36
	20% = 72
	360 − 72 = 288

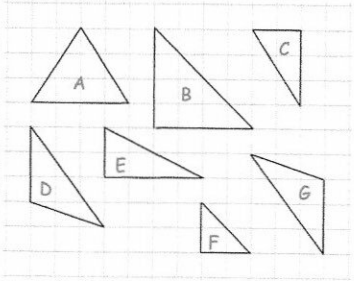
Laura wants to buy 40 candles.
Which website should Laura use?

Corbettmaths Candles

19th December **Foundation 5-a-day**

Write down the letters of two triangles that are mathematically similar.

B , F



Freya drives 20 miles to Belfast at an average speed of 40mph.

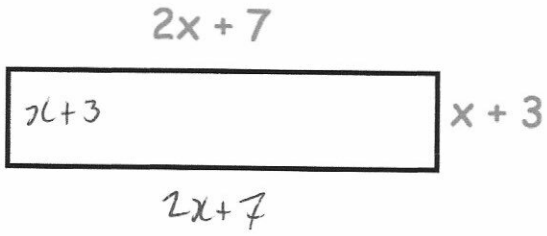
How long does the journey take?

20 ÷ 40 = 0.5

30 mins

Find an expression for the perimeter of the rectangle

6x + 20

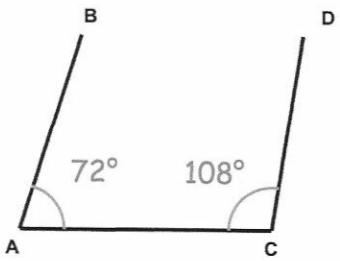


Edward says the lines AB and CD are parallel.

Is Edward correct?

Yes

Co-interior angles add to 180°



Not drawn accurately

At a rugby match, the ratio of children to adults is 2 : 3
There are 80 children in the crowd.
Each adult ticket costs £8
Each child ticket costs a quarter of the adult ticket. 8 ÷ 4 = 2

Work out the total money made from ticket sales

80 ÷ 2 = 40 40 x 3 = 120

120 x 8 = 960

80 x 2 = 160

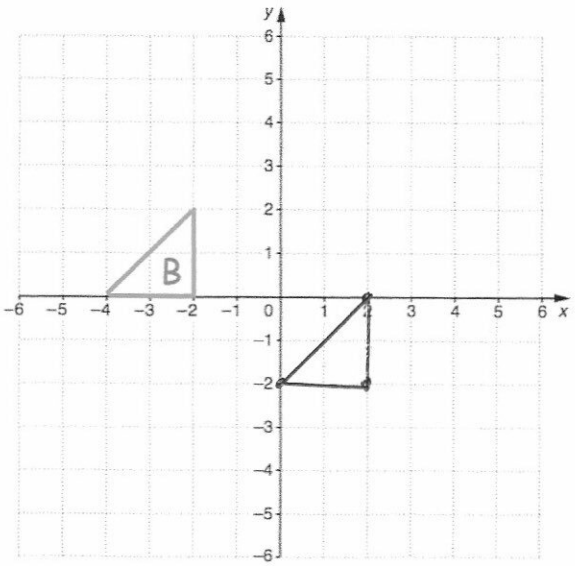
+

£1120

20th December **Foundation 5-a-day**

Write 4714 correct to 1 significant figure.

5000



Translate triangle B using translation vector $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$

Sahil is going to buy a car.
The car costs £24000.
He pays a deposit of 15%.
Sahil pays the rest of the money over 20 monthly payments.

$20400 \div 20 = £1020$

Work out the cost of each monthly payment.

10% = £2400
5% = £1200
15% = £3600
24000 − 3600 = £20400

£1020

input → Multiply by 6 → Subtract 80 → output

The input is the same as the output.

Find the input

16

$16 \times 6 = 96$
$96 - 80 = 16$

21st December **Foundation 5-a-day**

Starter	Main
Soup	Beef
Melon	Gammon
Prawns	

Elsie is going to choose one starter and one main.

List all her possible choices.

SB MB PB
SG MG PG
6

Rhys is x years old.
Hannah is 7 years younger than Rhys.

Write an expression for Hannah's age.

$x - 7$

Each member of a club is going to receive a badge.
There are 824 members.

The badges are sold in packs of 15.

Work out the least number of packs of badges that need to be bought.

$$15 \overline{)\,8^{8}2^{7}4} \quad 054 \text{ r } 14$$

55 packs

The pie chart shows the flavours of ice cream sold by a shop in one day.
There were a total of 270 ice creams sold.

Calculate the number of vanilla flavoured ice creams sold. 1/6

$$6 \overline{)\,2^{2}7^{3}0} \quad 045$$

45

Calculate the number of strawberry flavoured ice creams sold. 1/5

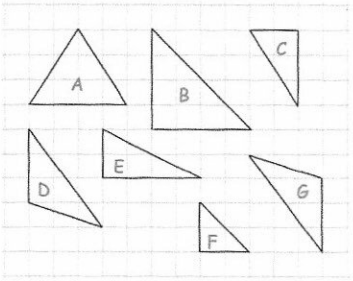
$$5 \overline{)\,2^{2}7^{2}0} \quad 054$$

54

22nd December **Foundation 5-a-day**

Write down the letters of two congruent triangles.

D , G



George is going on holiday to Poland

George changes £565 into Zloty.
The exchange rate is £1 = 5 Zloty

Work out how many Zloty George gets for £565.

565
× 25
3
2825

2825 Zloty

Find the lowest common multiple (LCM) of 25 and 30

25 50 75 100
30 60 90 120

125 150
150

150

Find an expression for the area of the rectangle.

5x X 2y

10xy

5x

2y

Ranjit drives 110 miles to the hotel.
His journey takes 2½ hours.

Work out his average speed.

110 ÷ 2·5 = 44mph

23rd December **Foundation 5-a-day**

Solve $w + 3 = 20$

$w = 17$

Solve $7y = 35$

$y = 5$

Mr Cooper wants to hire a carpet cleaner.

It costs £15 per day.

Mr Cooper's final bill is £90.

How many days did he hire the carpet cleaner for?

$90 \div 15 = 6$ days

Arrange in order, starting with the smallest.

$\frac{5}{8}$ $\frac{3}{4}$ $\frac{11}{20}$ $\frac{3}{5}$

$\frac{25}{40}$ $\frac{30}{40}$ $\frac{22}{40}$ $\frac{24}{40}$

$\frac{11}{20}$ $\frac{3}{5}$ $\frac{5}{8}$ $\frac{3}{4}$

Share £405 in the ratio 2:3

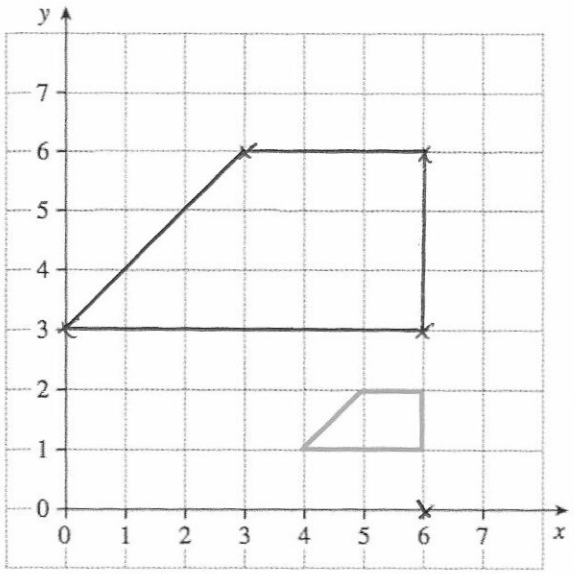
$2 + 3 = 5$

$405 \div 5 = 81$

$81 \times 2 = 162$

$81 \times 3 = 243$

Enlarge the trapezium by scale factor 3, centre (6, 0).



24th December	**Foundation 5-a-day**
James buys a number of plants. Each plant costs £4.19 How many plants can James buy for £20? 419 838 1257 1676 2095 4	How much change should he receive? 2000 -1676 324 £3.24
In a French test, Leah scored 13 out of 20. In a German test she scored 17 out of 25. Which is the better result? German	$\frac{13}{20} = \frac{65}{100}$ 65% $\frac{17}{25} = \frac{68}{100}$ 68%
Simplify $5w - 3w + 9w$ $11w$	
Shown below is a 2 pence coin.  : 0.185cm Each 2 pence coin is 0.185cm thick. Stephen builds a tower of 300 2p coins. How tall is the tower?	$0.185 \times 300 = 55.5$cm
Factorise fully $6y^2 + 15y$	$3y(2y + 5)$

25th December **Foundation 5-a-day**

Estimate

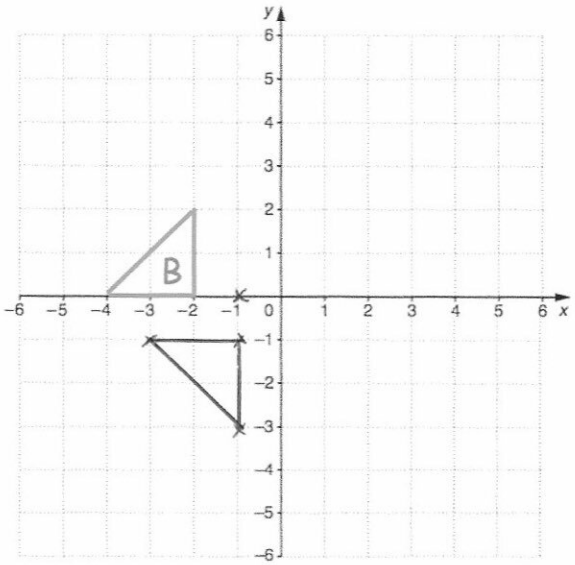
$$\frac{4.01 \times 29.5}{1.978} \approx \frac{4 \times 30}{2}$$

$$\frac{120}{2} = 60$$

3	8	10

Write a number on each card so that:

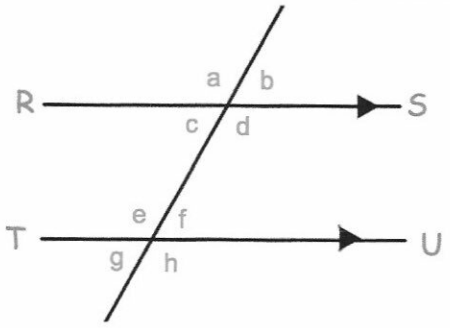
The range is 7
The median is 8
and the mean is 7.



Rotate B 90° anticlockwise about (–1, 0)

Which angle is vertically opposite to angle *a* ?

d



26th December **Foundation 5-a-day**

Work out 0.3 x 0.5

$3 \times 5 = 15$

0.15

Solve

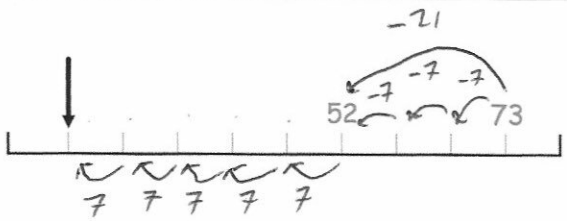
$\frac{w}{2} = 20$

$w = 40$

Shown is a number line.

What number is the arrow pointing to?

17

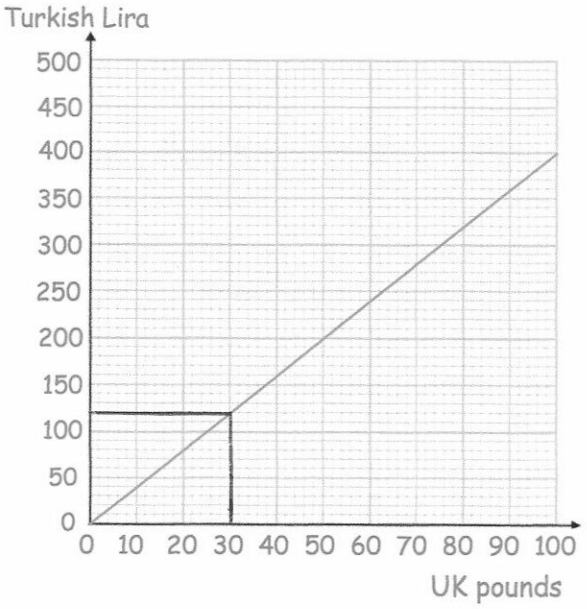


52 - 35

Max buys a T-shirt for 120 Turkish Lira.

How much in UK Pounds?

£30



Covert £350 into Turkish Lira.

£100 = 400 Lira

£300 = 1200 Lira

£50 = 200 Lira

£350 = 1400 Lira

1400 Lira

27th December **Foundation 5-a-day**

Win	2 4 6 3 10	30pts
Draw	2 3	3
Loss	○ ○ ○ ◔	

Key ○ represents 2 matches

A win is worth 3 points,
A draw is worth 1 point
A lose is worth 0 points.

How many points did Newport County earn over the season?

33 points

List the first 6 cube numbers

1 8 27 64 125

216

Find the value of 4c + 5g when

c = –6 and g = 1.5

$4 \times -6 = -24$

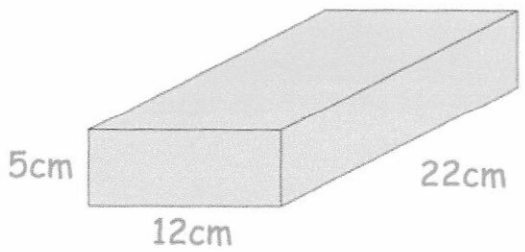
$5 \times 1.5 = 7.5$

$-24 + 7.5 = -16.5$

Find the volume of the cuboid.

$5 \times 12 = 60$

$60 \times 22 = 1320\ cm^3$



Solve $\frac{x}{2} = 1\frac{1}{2}$

$\frac{x}{2} = 1.5$

$x = 3$

28th December **Foundation 5-a-day**

Work out $3^3 - 1$

$27 - 1 = 26$

Simplify $a^4 \div a^{-2}$

a^6

Put the names of these quadrilaterals into the correct boxes.

Square, parallelogram, kite and rhombus.

	Line Symmetry	No Line Symmetry
Two pairs of parallel lines	Square Rhombus	Parallelogram
No parallel lines	kite	

Ravi says "to find the lowest common multiple of two numbers, just multiply them together."

Explain why Ravi is wrong.

e.g the LCM of 4 & 6 is 12
not $4 \times 6 = 24$

29th December **Foundation 5-a-day**

If x = 5

Work out the value of 4x

$4 \times 5 = 20$

If x = 3 and y = 9

Work out 2x – y

$2 \times 3 = 6$

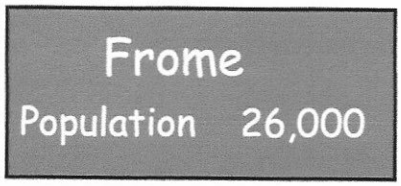
$6 - 9 = -3$

Expand and simplify

$3(2x + 1) + 2(x + 7)$

$6x + 3 + 2x + 14$

$8x + 17$



This sign is correct to the nearest thousand.

What is the lowest possible number of people that live in Frome?

25500

Solve $5(2y + 1) = 85$

$10y + 5 = 85$

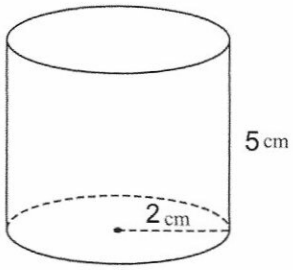
$10y = 80$

$y = 8$

Calculate the volume of the cylinder.

$\pi \times 2^2 \times 5$

$62.8 cm^3$



30th December **Foundation 5-a-day**

Work out

$\frac{7}{20} + \frac{1}{3}$ $\frac{21}{60} + \frac{20}{60} = \frac{41}{60}$

Imogen is organising a barbecue.
She needs bread rolls and burgers.

20 40 (60)
Bread rolls are sold in packs of 20. $\times 3 = 60$
Burgers are sold in packs of 12. $\times 5 = 60$
12 24 36 48 (60)
Imogen buys exactly the same number of bread rolls as burgers.

What is the least number of each pack that Imogen buys?

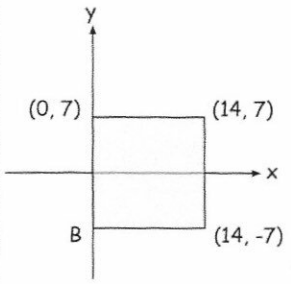
3 ..... packs of bread rolls

5 ..... packs of burgers

The diagram shows a square.

Write down the coordinates of **B**

(0, -7)



The table shows the prices of first and second class stamps for Letters and Large Letters up to 500g.

Matt is going to post a Letter weighing 80g and a Large Letter weighing 300g. He chooses to post them both as second class.

Format	Weight	1st Class	2nd Class
Letters	0 - 100g	62p * 9p	53p ✓
Large Letters	0 - 100g	93p	73p
	101 - 250g	£1.24	£1.17
	251 - 500g	£1.65 * 17p	£1.48 ✓

How much money has Matt saved by posting second class instead of first class?

17 + 9 = 26p

31st December **Foundation 5-a-day**

Round 18.7347 to two decimal places

18.73

$-1 \leq x < 3$

Write down all the possible integer values of x.

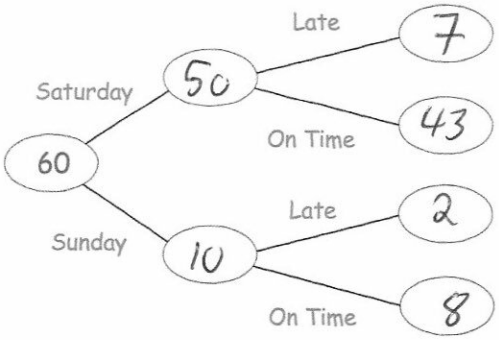
-1, 0, 1, 2

Work out $\frac{7}{8} \times \frac{3}{4}$ $= \frac{21}{32}$

During a weekend, 60 buses arrive in a village.

43 of the 50 buses that arrive on the Saturday are on time.
2 of the buses that arrive on Sunday are late.

Complete the frequency tree.



What fraction of the buses are late?

$\frac{9}{60} = \frac{3}{20}$