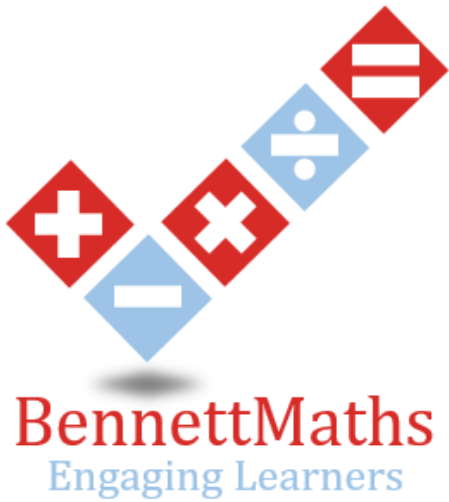


***BennettMaths will be live on TikTok the night before paper 3,  
going through all the predicted papers.***

***Tuesday 9<sup>th</sup> June at 8pm***

Candidate surname

Other names



## Best Guess Paper – 3F Calculator

Within this booklet you will find my best guess at which topics might be on the third AQA foundation gcse maths paper.

There may be other topics that appear on paper 3, so please ensure that you continue to revise all topics.

The paper consists of 28 questions totalling 80 marks.

**1(a)** Solve  $x + 4 = 9$

**[1 mark]**

Answer      $x = 5$     

**(b)** Solve  $3x = 15$

**[1 mark]**

Answer      $x = 5$     

**2** Use the digits listed to help answer each part of this question

0, 1, 2, 6, 9

**(a)** Use three of the digits to create the largest possible even number

**[1 mark]**

Answer     962    

**(b)** Use all five of the digits to create the largest possible multiple of 5

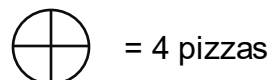
**[1 mark]**

Answer     96210

- 3** The pictogram shows the number of pizza eaten by three cousins during a year.

|               |                                                                                                                                                                                                                                                          |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Leo</b>    |    12 |
| <b>Margot</b> |   6                                                                                    |
| <b>Oscar</b>  |                                                                                        |

Key:



The three cousins ate a total of 26 pizzas over the year.

- (a) Complete the pictogram to show this information

**[2 marks]**

$$26 - 12 - 6 = 8$$

The average cost of each pizza was £6.23

- (b) Work out the total cost of the 26 pizzas.

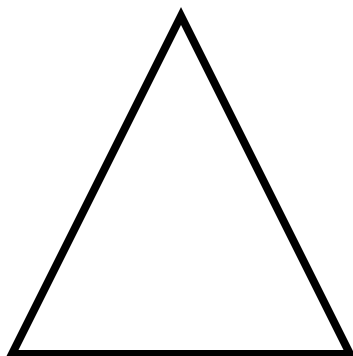
**[2 marks]**

$$26 \times 6.23 =$$

$$161.98$$

Answer \_\_\_\_\_

- 4** The shape below is an isosceles triangle.



- (a) Write down the total number of lines of symmetry that the shape has **[1 mark]**

Answer

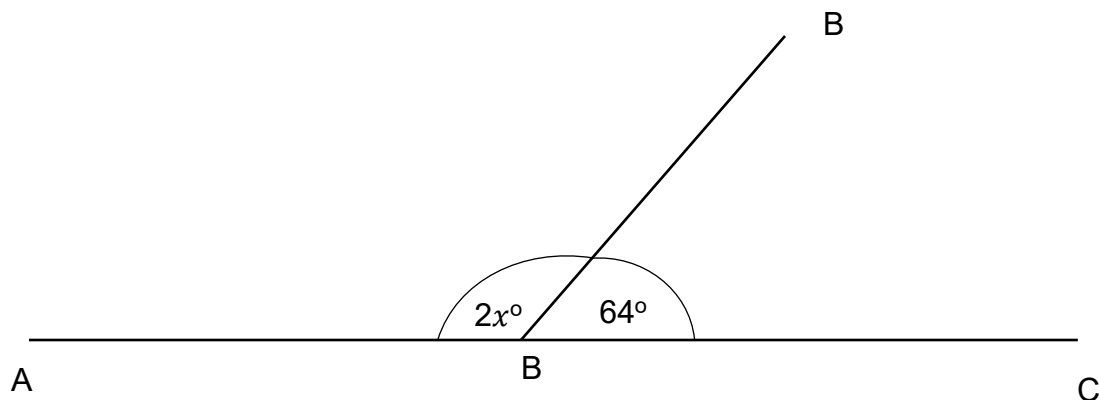
1

- (b) Write down the total number of lines of symmetry that an equilateral triangle has **[1 mark]**

Answer

3

- 5 AC and BD are two straight lines.



Work out the value of  $x$

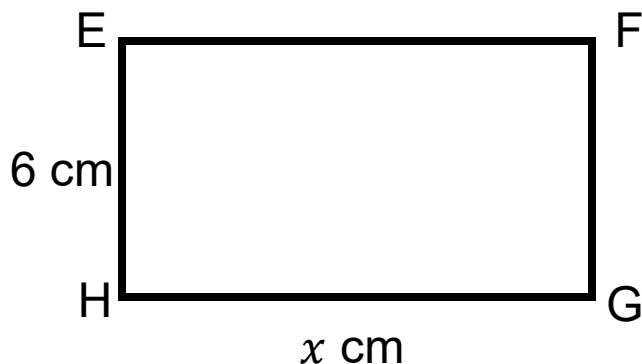
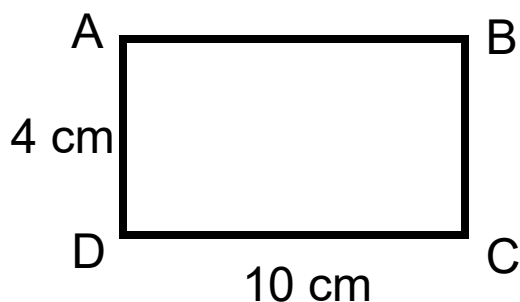
[2 marks]

$$2x + 64 = 180$$

$$2x = 116$$

Answer  $x = 58$

- 6** ABCD and EFGH are similar rectangles.



Work out the value of  $x$

[2 marks]

$$6 \div 4 = 1.5$$

$$10 \times 1.5 =$$

15

Answer

\_\_\_\_\_

**7(a)** Simplify  $10^4 \times 10^5$

**[1 mark]**

Answer 10<sup>9</sup>

**7(b)** Simplify  $10^4 \div 10^5$

**[1 mark]**

Answer 10<sup>-1</sup>

**7(c)** Work out  $500 \times 20 \times 10^3$ . Give your answer as a power of 10.

**[2 marks]**

10000  $\times 10^3$

$10^4 \times 10^3$

Answer 10<sup>7</sup>

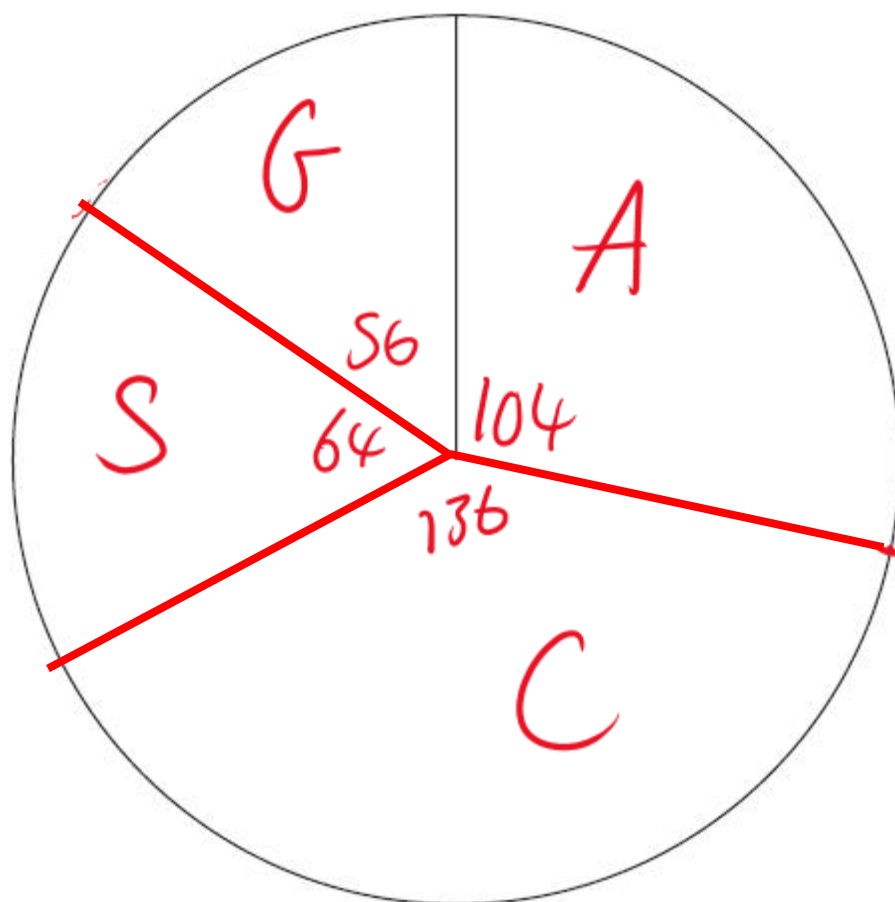
- 8 The frequency table below shows the favourite sport of 45 students

| Sport      | Frequency         |
|------------|-------------------|
| athletics  | 13 $\times 8$ 104 |
| cycling    | 17 $\times 8$ 136 |
| swimming   | 8 $\times 8$ 64   |
| gymnastics | 7 $\times 8$ 56   |

Draw an accurate pie chart to represent this information

[3 marks]

$$360 \div 45 = 8$$



**9** Leo buys 10 Pokémon cards for £75

He sells 6 of the cards for £10.50.

He sells the remaining cards for £27.

Work out the percentage profit that Leo made.

**[4 marks]**

$$6 \times 10.50 = 63$$

$$4 \times 27 = 108$$

$$63 + 108 = 171$$

$$171 - 75 = 96$$

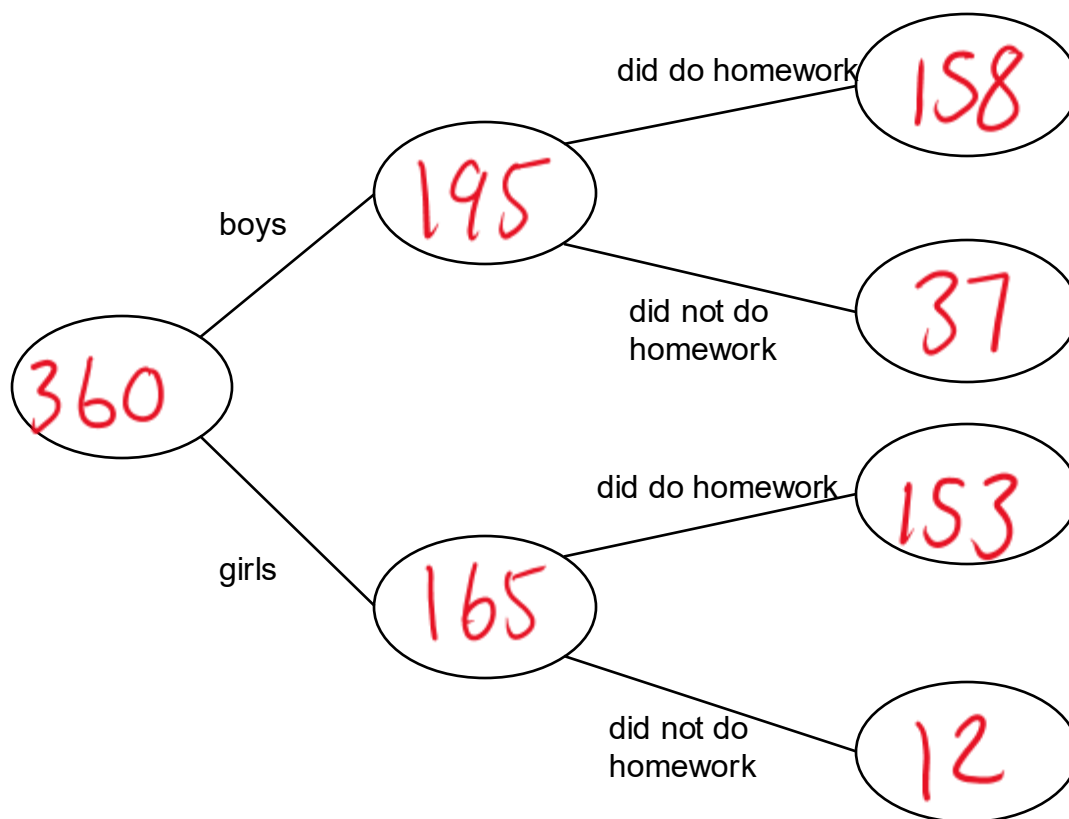
$$\frac{96}{75} \times 100 = 128\%$$

Answer \_\_\_\_\_

- 10** 360 students have some homework.  
195 of the students were boys.  
12 of the 49 students that did not do their homework were girls.

(a) Use this information to complete the frequency tree.

**[3 marks]**



- (b) One of the boys is chosen at random.  
Write down the probability that they did do their homework

**[2 marks]**

$$\frac{158}{195}$$

Answer \_\_\_\_\_

- 11** Using a calculator, work out the value of

$$\sqrt[3]{\frac{4.3 \times \sin(45)}{9.3^2}}$$

- (a) Write down all the numbers on your calculator display

**[2 marks]**

Answer 0.3275889

- (b) Round your answer to part (a) to 3 significant figures

**[1 mark]**

Answer 0.328

- 12** The circumference of a circle is  $24\pi$ .

Work out the length of the radius of the same circle

**[2 marks]**

$$\pi \times D = 24\pi \quad D = 24$$

$$r = 24 \div 2 =$$

Answer 12

**13** Convert  $150\text{cm}^2$  into  $\text{mm}^2$

**[2 marks]**

$\xrightarrow{\times 10^2}$

Answer

15000

**14**  $Z = 2p^2 + 3p - 5$

**[3 marks]**

Work out the value of  $Z$  when  $p = -4$

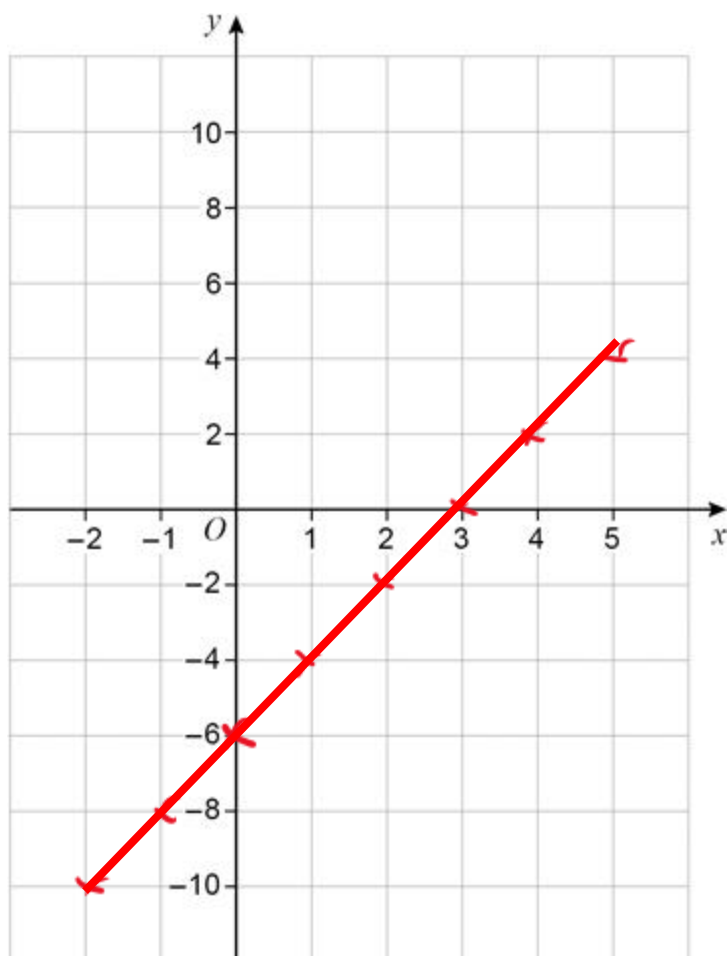
$$\begin{aligned} Z &= 2(-4)^2 + 3(-4) - 5 \\ &= 32 - 12 - 5 \end{aligned}$$

Answer

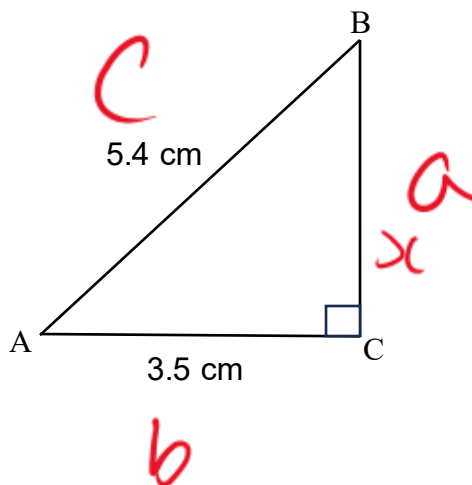
15

- 15** On the grid, draw the graph of  $y = 2x - 6$  for values of  $x$  from  $-2$  to  $5$

**[3 marks]**



- 16** The right-angled triangle ABC has been drawn below.  
AB = 5.4 cm  
AC = 3.5 cm



Work out the length of BC.  
Give your answer correct to 2 decimal places.

[3 marks]

$$x^2 + 3.5^2 = 5.4^2$$

$$x^2 + 12.25 = 29.16$$

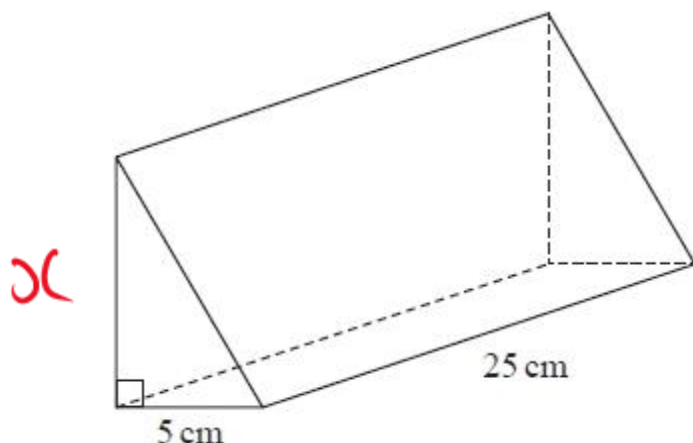
$$x^2 = 16.91$$

$$x = \sqrt{16.91}$$

$$4.11$$

Answer \_\_\_\_\_

**17** The diagram shows a prism.



The cross section of the prism is a right-angled triangle.

The base of the triangle has length 5 cm

The prism has length 25 cm

The prism has volume 750 cm<sup>3</sup>

Work out the height of the prism.

**[3 marks]**

$$\frac{x \times 5}{2} \times 25 = 750$$

$$\frac{5x}{2} = 30$$

$$5x = 60$$

Answer  $x = 12$

**18** Use a word from the list below to complete each sentence.

Arc

Chord

Circumference

Diameter

Radius

Sector

Segment

Tangent

The radius is half the length of the diameter. [1 mark]

The segment is the region created by drawing a chord through a circle. [1 mark]

The arc is a section of the circumference. [1 mark]

19

Make  $x$  the subject of

$$\frac{3x + y}{b} = a \quad [2 \text{ marks}]$$

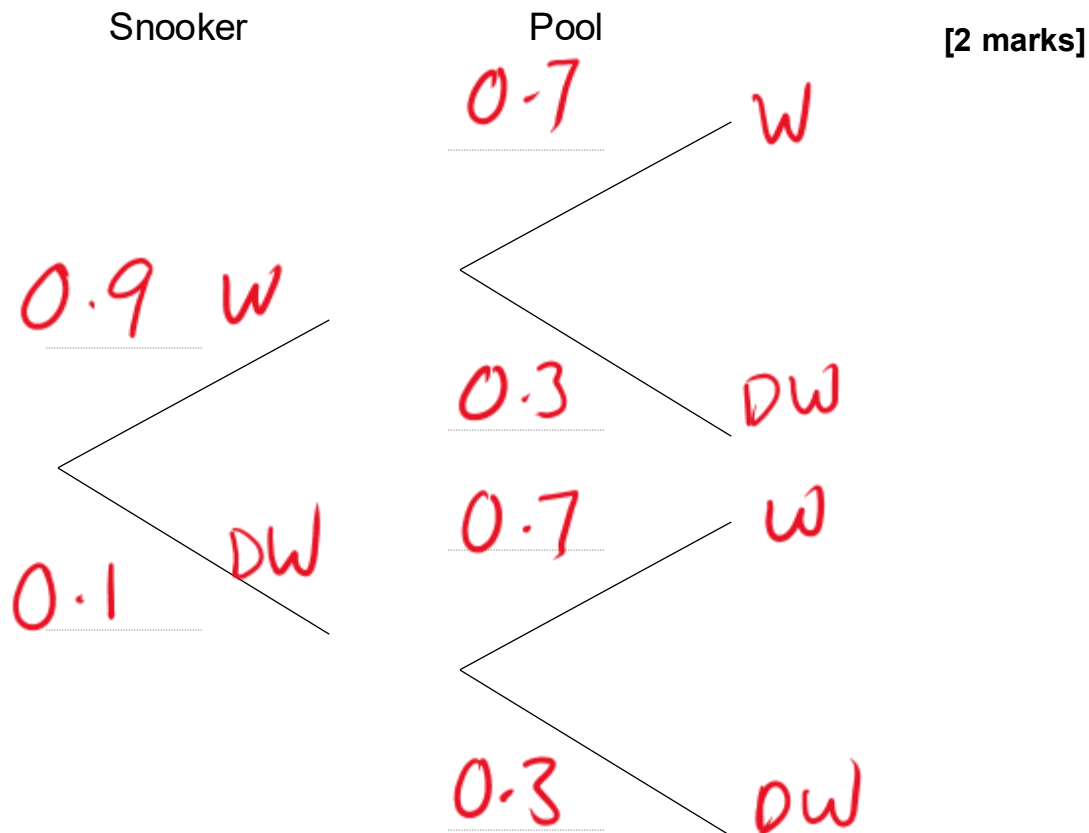
$$3x + y = ab$$

$$3x = ab - y$$

Answer

$$x = \frac{ab - y}{3}$$

- 20** Margot is going to play one game of snooker and one game of pool.  
The probability that Margot wins a game of snooker is 0.9.  
The probability that Margot does not win a game of pool is 0.3.



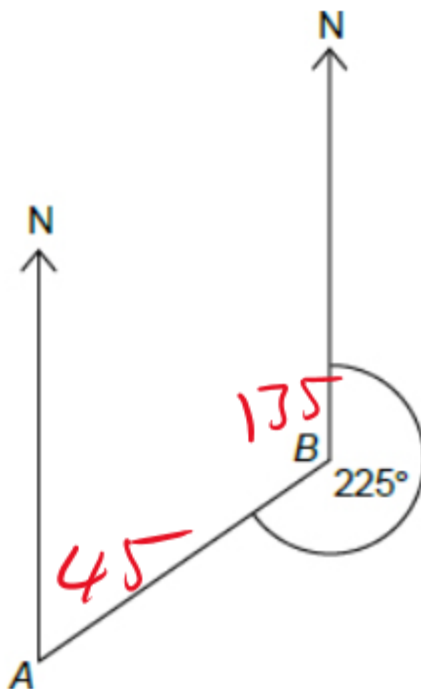
- (b) Work out the probability that Margot wins at both snooker and pool.

$$0.9 \times 0.7 = 0.63$$

**[2 marks]**

Answer \_\_\_\_\_

**21** The bearing of A from B is  $225^\circ$



**[2 marks]**

Work out the bearing of B from A

$$360 - 225 = 135$$

$$180 - 135 = 45$$

Answer

**045**

- 22** Expand and simplify  $3(2x + 1) - 4(x - 5)$  **[2 marks]**

$$6x + 3 - 4x + 20$$

Answer  $2x + 23$

- 23** The surface area of a cube is  $150\text{cm}^2$

Work out the length of the cube

**[3 marks]**

$$150 \div 6 = 25$$

$$\sqrt{25} = 5$$

Answer  $5$

- 24** A number,  $n$ , is rounded to 2 significant figures.  
The result is 2.3  
Complete the error interval for  $n$

**[2 marks]**

$$2.25 \leq n < 2.35$$

- 25** Frankie travels 400km in 4 hours and 45 minutes.

**[2 marks]**

Work out his average speed, giving your answer as a decimal.

$$\begin{array}{l} \div 4.75 \quad 400\text{km} : 4.75\text{hours} \div 4.75 \\ \hline \quad \quad \quad = 1\text{ hour} \end{array}$$

Answer 84.2 km/h

**26** Solve algebraically

**[3 marks]**

$$\begin{array}{r} + \quad 3x + 2y = 19 \\ \quad 7x - 2y = 31 \end{array}$$

$$10x = 50 \quad 3(5) + 2y = 19$$

$$x = 5$$

$$15 + 2y = 19$$

$$2y = 4$$

$$y = 2$$

Answer \_\_\_\_\_

27

(a) Express 30 as a product of primes

[2 marks]

30  
3 10

10  
2 5

Answer

$2 \times 3 \times 5$

(b) Write down the highest common factor (HCF) of 30 and 45

[1 mark]

Answer

15

(c) Write down the lowest common multiple (LCM) of 30 and 45

[1 mark]

Answer

90

28

Match each sequence to its description

[4 marks]

1,1,2,3,5

4,9,14,19,24

1,3,9,27,81

1,8,27,64,125

Arithmetic progression

Geometric progression

Square numbers

Cube numbers

Fibonacci sequence

