

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

GCSE Mathematics

F



Foundation

Paper 3

Calculator

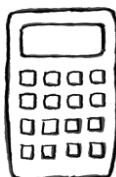
Summer 2019

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments.



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to the answer book.

Advice

- In all calculations, show clearly how you work out your answer.

For Examiner's Use

Pages	Mark
3	
4 - 5	
6 - 7	
8 - 9	
10 - 11	
12 - 13	
14 - 15	
16 - 17	
18 - 19	
20 - 21	
22 - 23	
24 - 25	
26 - 27	
TOTAL	

Teacher

Class

8300/MissB/3F

Practice Paper Overview

Q	Topic	Mark	Total
1	Types of Number	1	
2	Properties of Shapes	1	
3	Algebraic Expressions	1	
4	Probability in Words	1	
5	Money Problem	4	
6	Ratio Problem	3	
7	Expand and Simplify	2	
8	Probability	4	
9	Listing Outcomes	2	
10	Angle Problem	3	
11	Best Buy	3	
12	Midpoints	2	
13	Percentage Change	2	
14	Transformations	4	
15	Product of Prime Factors	3	
16	Trigonometry	2	
17	Pie Chart	5	
18	Ratio Problem	4	
19	Congruence	2	
20	Quadratic Graph	7	
21	Compound Interest	4	
22	Equation of Parallel Lines	3	
23	Direct Proportion	3	
24	Scatter Graph	4	
25	Simultaneous Equation	4	
26	Reverse Averages	4	
27	Error Interval	2	
		Total	80

Answer **all** questions in the spaces provided.

Do not write
outside the
box

- 1 Circle the all of the numbers which are **prime**.

[1 mark]

0

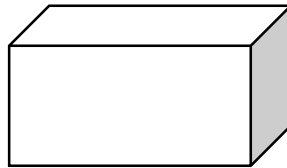
1

2

3

4

- 2 Here is a cuboid.



[1 mark]

Circle the amount of vertices the cuboid has.

2

4

6

8

10

12

- 3 Circle the algebraic expression.

[1 mark]

$$s = \frac{d}{t}$$

$$3x + 5 = 12$$

$$2(x + 4) \equiv 2x + 8$$

$$3x + 5$$

4 Here is a statement

“A number less than 7 will be scored when an
ordinary six-sided dice is rolled once.”

[1 mark]

Circle the statement which best describes it's likelihood.

Impossible

Unlikely

Even

Likely

Certain

5 Saman buys 3 coffees at £1.20 each

4 teas at 85p each

7 sandwiches at £1.95 each

Saman shares the total cost equally between 7 people.

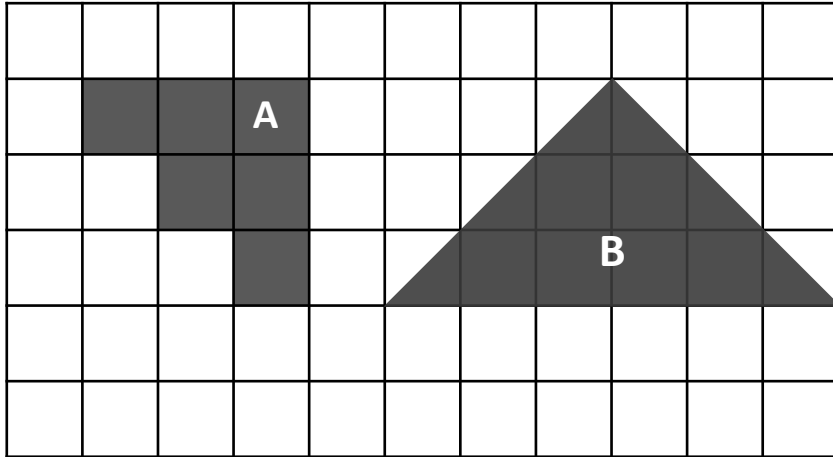
How much does each person pay?

[4 marks]

Answer _____

6 Work out

area of shape A : area of shape B



Give your answer in its simplest form.

[3 marks]

Answer _____ : _____

7 Expand and simplify

$$2x - 3(x + 4)$$

[2 marks]

Answer _____

- 8** A bag contains four different counters.
A counter is taken from the bag at random.
The table below shows some of the probabilities of taking each coloured counter.

Counter	Red	Green	Purple	Orange
Probability	0.05	0.32		0.2

- 8 (a)** Complete the table. **[2 marks]**

- 8 (b)** What is the probability that a green counter **is not** taken from the bag? **[2 mark]**

Answer _____

- 9 On a school sports day, students must take part in one track event and one field event.

Track	Field
Hurdles (H)	Long Jump (L)
Steeplechase (S)	Pole Vault (P)
Relay Race (R)	High Jump (J)

List all the possible combinations of events.

[2 marks]

- 10 Find the size of the missing angle x .

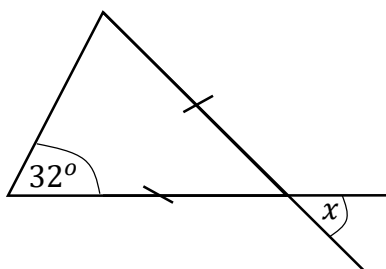


Diagram not
drawn accurately

[3 marks]

Give reasons for your answers

Answer _____

[3 marks]

[illegible]

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12 M is the mid point of a line segment AB.

A is the point (2, 3)

B is the point (8, 11)

Find the coordinates of M, the mid-point of the line AB.

[2 marks]

Answer _____

13 Paul buys a laptop from PC World for £529.

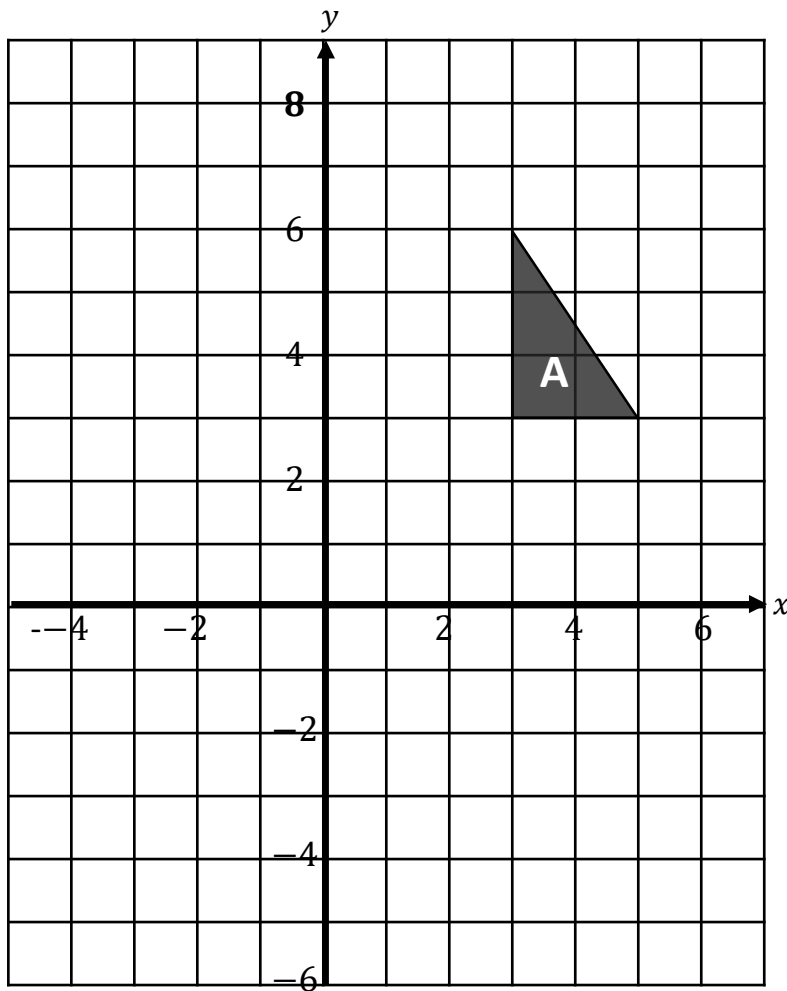
A year later it is worth £444.36.

Calculate the percentage decrease in the price.

[2 marks]

Answer _____

14



Triangle **A** is drawn on a coordinate grid.

Reflect triangle **A** in the line $x = 1$ and label this triangle **B**.

Enlarge triangle **B** by a scale factor of 2 from the centre $(-3, 5)$
label this triangle **C**.

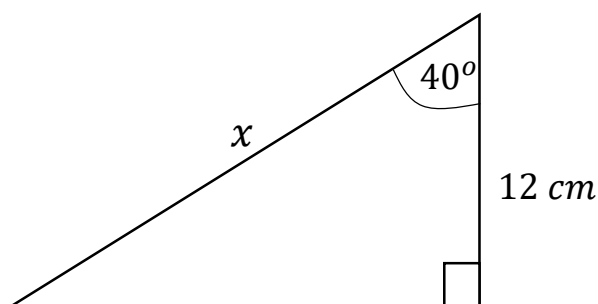
[4 marks]

15 Express 1176 as a product of its prime factors in index form.

[3 marks]

Answer _____

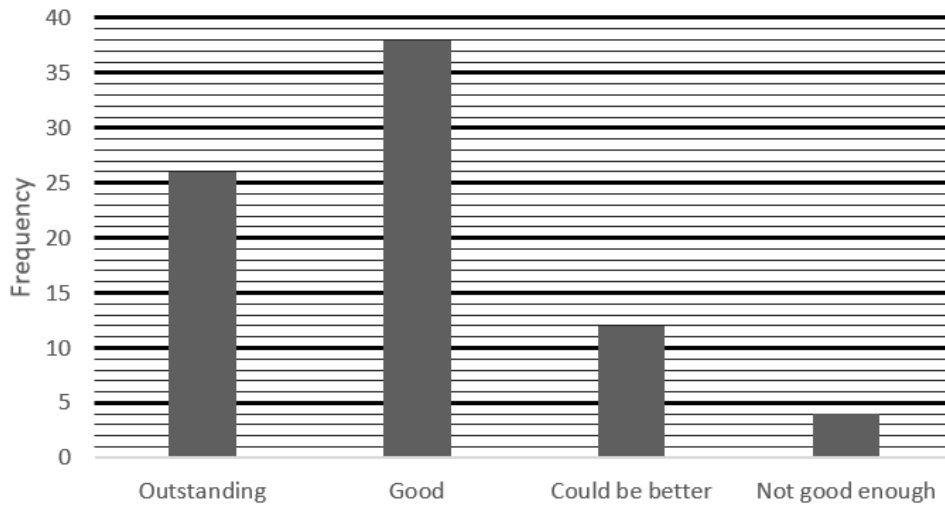
16 Work out the length x .



[2 marks]

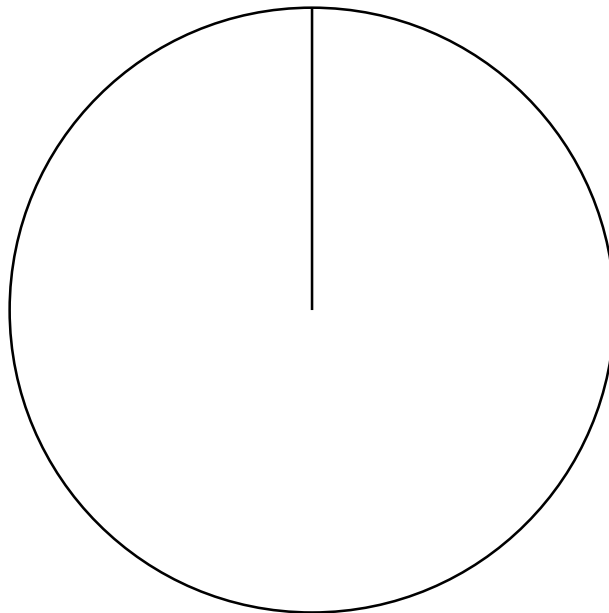
Answer _____ cm

- 17** A school asked 80 students what they thought of the schools canteen.
The results are shown in this bar chart.



Draw and label a pie chart to represent this data.

[5 marks]



18 Yellow paint costs £3.60 per litre.

Blue paint costs £2.90 per litre.

Yellow paint and blue paint are mixed in the ratio 1:3 to make green paint.

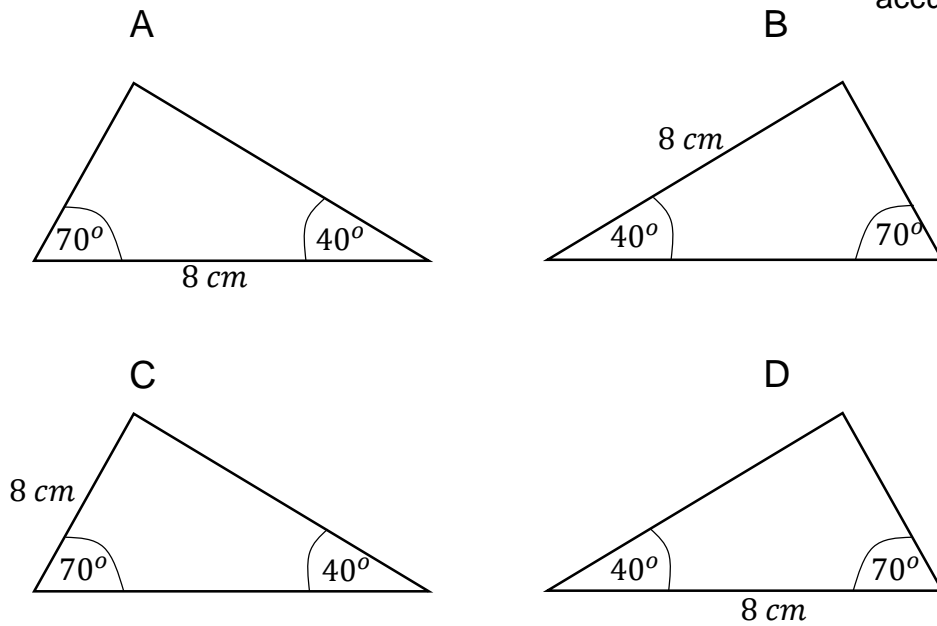
Work out the cost of 14 litres of green paint.

[4 marks]

Answer _____

19 Here are four triangles

Not drawn
accurately



19 (a) Which two triangles are congruent? Circle your answers.

[1 mark]

A

B

C

D

19 (b) Circle the reason for your answer to part (a).

[1 mark]

SSS

ASA

SAS

RHS

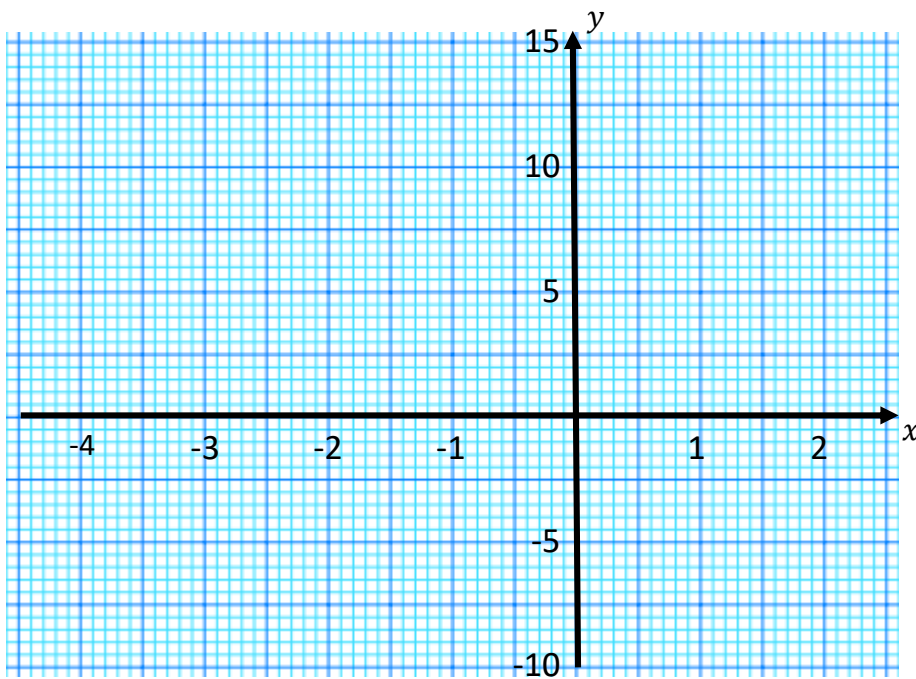
20 (a) Complete the table of values for $y = x^2 + 4x - 3$.

[2 marks]

x	-4	-3	-2	-1	0	1	2
y	-3		-7	-6		2	

20 (b) On the grid, draw the graph of $y = x^2 + 4x - 3$.

[2 marks]



20 (c) Circle the coordinates of the turning point of the curve.

[1 mark]

(0, -3) (-2, -7) (-2, 1) (2, -7) (4, -3)

20 (d) Use the graph to find approximate solutions to $x^2 + 4x - 3 = -5$

[2 marks]

$x =$ _____ $x =$ _____

21 Here is the interest rate for a bank account.

<p>Banks R Us</p> <p>Interest: 0.6% per year compound interest.</p>
<p>No withdrawals allowed until the end of three years.</p>

Adiqa has £15 000 she wants to invest.

21 (a) Calculate how much money Adiqa will have at the end of the 3 years.

[3 marks]

Answer _____

21 (b) Give a reason why Adiqa may not want to invest her money into a Banks R Us account.

[1 mark]

- 22** The straight line L has equation $y = 4x + 5$

The straight line M is parallel to line L and passes through the point (2, 6).

Find the equation of line M

[3 marks]

Answer _____

- 23** y is directly proportional to the square of x .

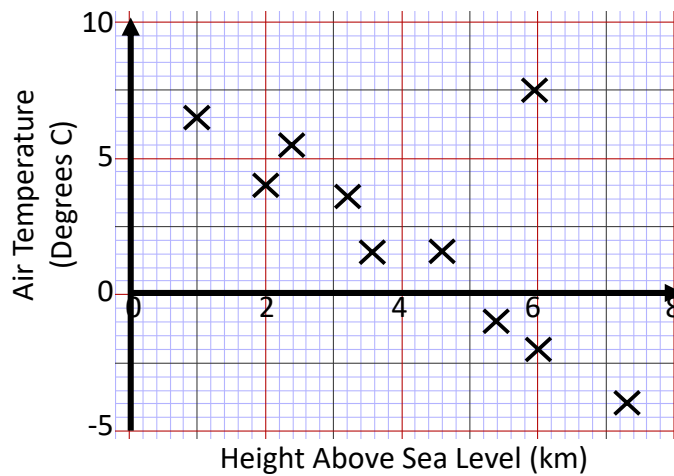
x	6	a
y	9	16

[3 marks]

Work out the value of a .

$a =$ _____

- 24** Below is a scatter graph showing the air temperature and the height above sea level.



- 24 (a)** Describe the correlation between the air temperature and the height above sea level.

[1 mark]

- 24 (b)** Circle and write down the coordinates of the outlier.

[1 mark]

Answer _____

- 24 (c)** Find an estimate of the height above sea level when the air temperature is -3°C .

[2 marks]

Answer _____

25 Solve the equations

$$3x + 5y = 19$$

$$4x - 2y = -18$$

You must use an algebraic method.

[4 marks]

 $x =$ _____ $y =$ _____

26 Five integers have

a mode of 7

a median of 8

a mean of 9.

What is the greatest possible range of the five integers?

You must show your working.

[4 marks]

Answer _____

27 Sally won a race with a time of 89.2 seconds.

This time, t , is to the nearest tenth of a second.

Complete the error interval due to rounding.

[2 marks]

$$\underline{\hspace{2cm}} \leq t < \underline{\hspace{2cm}}$$

End of Questions
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