Answer ALL TWELVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Work out an estimate for the value of 92×1.63
You must show all your working.

92 → 90
1·63 → 2

90 × 2 = 180

You could also have rounded 92 to 100 and/or 1·63 to 1·5 so various answers were allowed

180
.....
(Total for Question 1 is 2 marks)

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2 Elena spent 120 minutes at a sports centre.

She played badminton for 50 minutes.

She used the swimming pool for $\frac{1}{6}$ of the 120 minutes.

She used the gym for 20% of the 120 minutes.

She then spent the rest of the 120 minutes in the cafe.

Work out the total time, in minutes, that Elena spent in the cafe.

Badminton
50mins

Pool
$\frac{1}{6}$ of 120
= 20mins

Gym
20% of 120
= 24mins

120 - (50 + 20 + 24)
= 120 - 94
= 26

26
..... minutes
(Total for Question 2 is 4 marks)

3 (*a*) Work out $\frac{5}{12}+\frac{1}{6}$

$\frac{5}{12}+\frac{2}{12}$ ×2

$=\frac{7}{12}$

$\frac{7}{12}$

..... **(2)**

(*b*) Work out $\frac{3}{10}\times\frac{5}{8}$

Give your answer as a fraction in its simplest form. LOOK

$\frac{15}{80}\div 5 = \frac{3}{16}$

$\frac{3}{16}$

.....**(2)**

(Total for Question 3 is 4 marks)

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4 Jenny drives from London to Swindon at an average speed of 54 miles per hour.

She drives for $1\frac{1}{2}$ hours.

Work out the distance from London to Swindon.

54 miles = 1 hour

27 miles = $\frac{1}{2}$ hour

81 miles = $1\frac{1}{2}$ hours

81

..... miles

(Total for Question 4 is 2 marks)

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5 Solve $3n + n = 24$

$4n = 24$

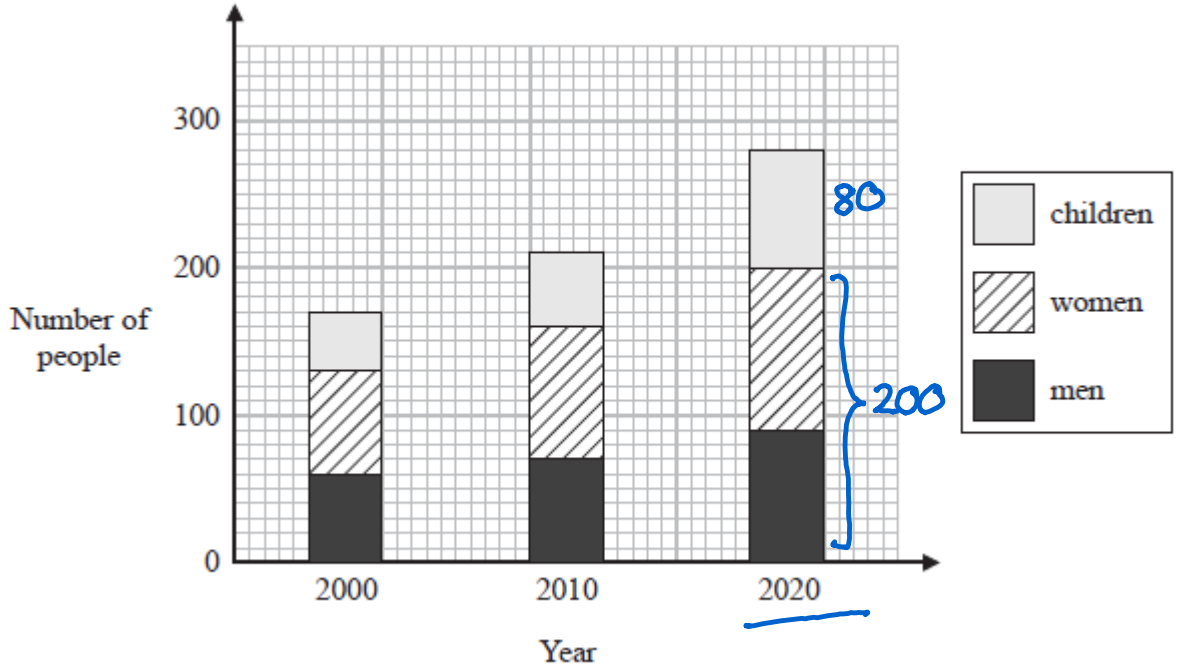
$n = \frac{24}{4}$

$= 6$

$n =$ 6

(Total for Question 5 is 2 marks)

6 The composite bar chart shows information about the number of people living in a village.



For the people living in the village in the year 2020

find the ratio of the number of children to the **total** number of men and women.

80 : 200 (o.e.)

(Total for Question 6 is 2 marks)

7 Write 124 as a product of its prime factors.

$124 = 2 \times 62$

$= 2 \times 2 \times 31$ (yes 31 is prime!)

$2^2 \times 31$

(Total for Question 7 is 2 marks)

8 Write 500 as a product of powers of its prime factors.

$500 = 5 \times 100$

$= 5 \times 10 \times 10$

$= 5 \times 2 \times 5 \times 2 \times 5$

$= 2^2 \times 5^3$

$2^2 \times 5^3$

(Total for Question 8 is 3 marks)

9 There are only blue counters, green counters, red counters and yellow counters in a bag.
The table shows the number of blue counters in the bag.

Colour	blue	green	red	yellow
Number of counters	30			

There is a total of 100 counters in the bag. Ashin takes at random a counter from the bag.

(*a*) Find the probability that the counter is **not** blue.

P(Blue) = $\frac{30}{100}$ so not B = $\frac{70}{100}$

$\frac{70}{100}$ **(2)**

The ratio of the number of blue counters to the number of green counters is 2 : 3

(*b*) Work out the number of green counters in the bag.

B : G
2 : 3 ×15
30 45

45 **(2)**

Bradley says,

"The number of red counters in the bag is the same as the number of yellow counters in the bag."

(*c*) Can Bradley be correct? Give a reason for your answer.

if G = 45 and B = 30 then R + Y = 25
if they have the same number R and Y would be 12.5 each but you can't have half a counter.

(1)

(Total for Question 9 is 5 marks)

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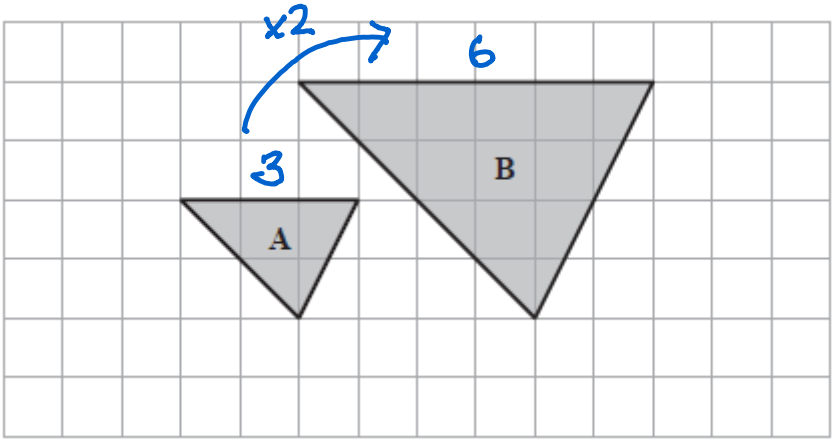
10 Here are two triangles on a grid.

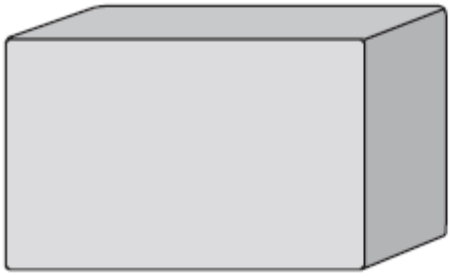


Triangle **B** is an enlargement of triangle **A**. Write down the scale factor of the enlargement.

2

(Total for Question 10 is 1 mark)

11



$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

A storage tank exerts a force of 10 000 newtons on the ground.

The base of the tank in contact with the ground is a 4 m by 2 m rectangle.

Work out the pressure on the ground due to the tank.

area = $4 \times 2 = 8\ m^2$

$P = \frac{10000}{8} = \frac{5000}{4} = \frac{2500}{2}$

$= 1250$

1250 ..... newtons / m^2

(Total for Question 11 is 2 marks)

12 Work out 0.004×0.32

4×32 $\quad 32 \times 4 = 128$

0.004×0.32

$= 0.00128$

0·00128 .....

(Total for Question 12 is 2 marks)

TOTAL FOR PAPER IS 31 MARKS