

Answer ALL TWENTY FOUR questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** x , 10 and y are three integers written in order of size, starting with the smallest integer.

The mean of x , 10 and y is 11

The range of x , 10 and y is 7

Work out the value of x and the value of y .

$x =$

$y =$

(Total for Question 1 is 2 marks)

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

- 2** A box is put on a table.

The face of the box in contact with the table is in the shape of a rectangle, 2 m by 1.25 m.

The pressure on the table due to the box is 42 newtons/m²

Work out the force exerted by the box on the table.

..... newtons

(Total for Question 2 is 3 marks)



3 Behnaz makes candles.

She has 6.3 kilograms of wax and uses it all to make candles.
Each candle Behnaz makes uses 210 grams of wax.

Behnaz sells $\frac{2}{5}$ of the candles for \$13 each.

She then reduces this price by 20% and sells the rest of the candles.

Work out the total amount of money Behnaz gets by selling all the candles she made.

\$.....

(Total for Question 3 is 4 marks)

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4 (a) Expand and simplify $3(c - 7) + 2(3c + 4)$

.....
(2)

(b) Expand and simplify $(x + 7)(x - 2)$

.....
(2)

(c) Factorise fully $28y^2 - 21y$

.....
(2)

(d) Solve $\frac{7x - 2}{4} = 3x + 1$

Show clear algebraic working.

$x =$

(3)

(Total for Question 4 is 9 marks)



5 Abelle flew by plane from Dubai to Rome.

The flight time was 6 hours 42 minutes.

The average speed of the plane was 650 kilometres per hour.

Work out the distance the plane flew.

.....kilometres

(Total for Question 5 is 3 marks)

6 Hiran invests 20 000 rupees in an account for 3 years at 1.5% per year compound interest.

Work out the total amount of money in the account at the end of 3 years.

Give your answer to the nearest rupee.

.....rupees

(Total for Question 6 is 3 marks)

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7 (a) Simplify fully $\frac{20x^2y^6}{4x^2y^2}$

.....
(2)

(b) Make e the subject of the formula $h = 3e + f$

.....
(2)

(Total for Question 7 is 4 marks)

8 From point A , Stanley walks 200 m due east to point B .
From B , he then walks 160 m due south to point C .

Work out the length of AC .
Give your answer correct to 3 significant figures.

.....metres

(Total for Question 8 is 3 marks)

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9

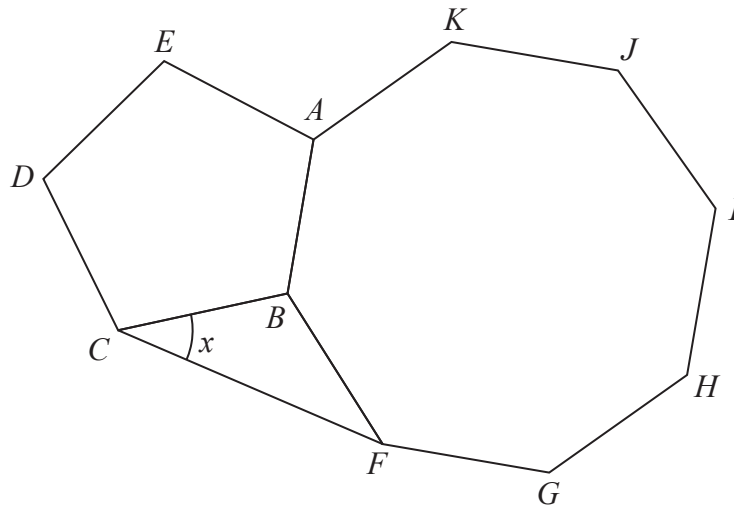


Diagram **NOT** accurately drawn

The diagram shows a regular pentagon, $ABCDE$, a regular octagon, $ABFGHIJK$, and an isosceles triangle, BCF .

Work out the size of angle x .

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(Total for Question 9 is 4 marks)



10 $ABCD$ is a trapezium.

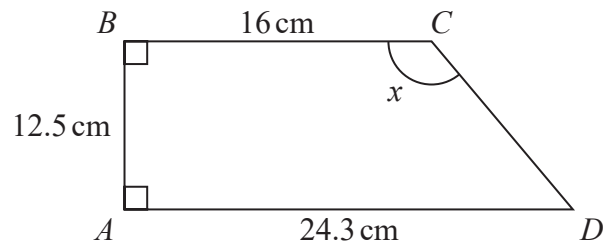


Diagram **NOT**
accurately drawn

Work out the size of angle x .
Give your answer correct to 1 decimal place.

(Total for Question 10 is 4 marks)

