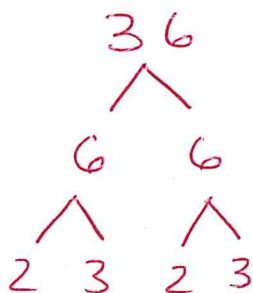


1/23 Write 36 as a product of its prime factors.



.....
 $2 \times 2 \times 3 \times 3$

(Total 2 marks)

2/24 Kiaria is 7 years older than Jay.
 Martha is twice as old as Kiaria.
 The sum of their three ages is 77.

Find the ratio of Jay's age to Kiaria's age to Martha's age.

$$\text{Jay} = x$$

$$\text{Kiaria} = x + 7$$

$$\text{martha} = 2(x + 7) = 2x + 14$$

$$\text{Total} = x + x + 7 + 2x + 14$$

$$77 = 4x + 21$$

$$56 = 4x$$

$$x = \frac{56}{4}$$

$$x = 14$$

$$J = 14$$

$$K = 14 + 7 = 21$$

$$M = 42$$

$$J : K : M$$

$$14 : 21 : 42$$

$$2 : 3 : 6$$

.....
 $2 : 3 : 6$

(Total 4 marks)

3/25

$ABCD$ is a parallelogram.

EDC is a straight line.

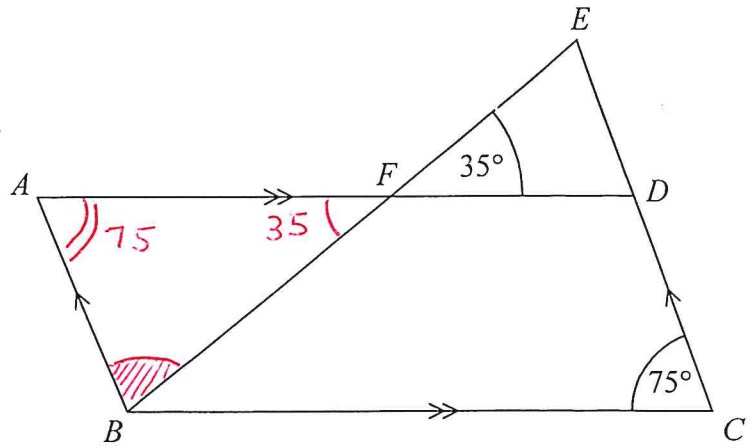
F is the point on AD so that BFE is a straight line.

Angle $EFD = 35^\circ$

Angle $DCB = 75^\circ$

Show that angle $ABF = 70^\circ$

Give a reason for each stage of your working.



$$\angle AFB = 35^\circ$$

vertically opposite angles are equal

$$\angle FAB = 75^\circ$$

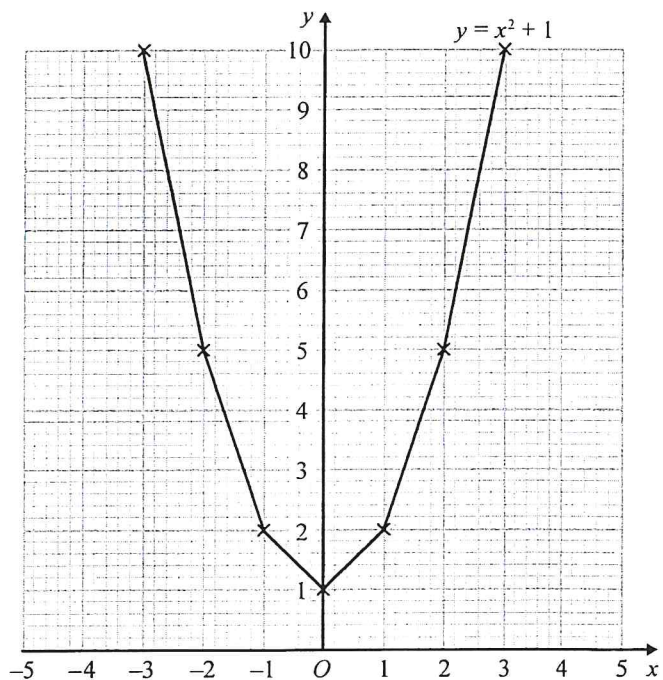
opposite angles in a parallelogram are equal

$$\begin{aligned}\angle ABF &= 180 - (35 + 75) \\ &= 180 - 110 \\ &= 70^\circ\end{aligned}$$

Angles in a triangle add up to 180

(Total 4 marks)

- 7/29 Brogan needs to draw the graph of $y = x^2 + 1$
Here is her graph.

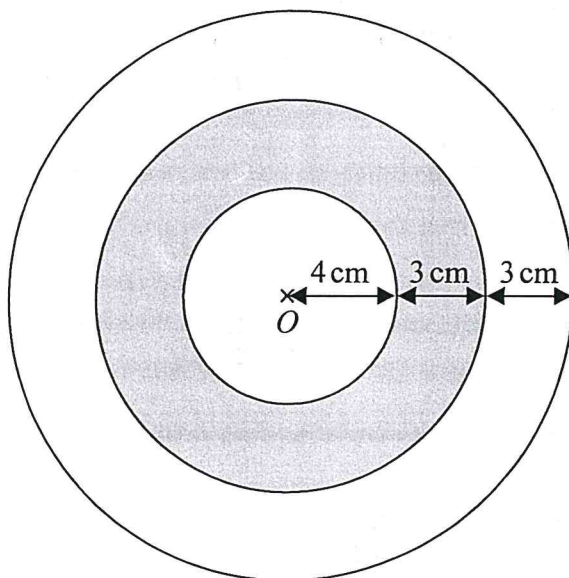


Write down one thing that is wrong with Brogan's graph.

It should be a smooth curve

(Total 1 mark)

4/26 The diagram shows a logo made from three circles.



$$\text{Area} = \pi r^2$$

Each circle has centre O .

Daisy says that exactly $\frac{1}{3}$ of the logo is shaded.

Is Daisy correct?

You must show all your working.

$$\text{Small circle} = \pi \times 4^2 = 16\pi$$

$$\text{medium circle} = \pi \times 7^2 = 49\pi$$

$$\text{Big circle} = \pi \times 10^2 = 100\pi$$

$$\text{Shaded} = 49\pi - 16\pi = 33\pi$$

$$\text{Fraction shaded} = \frac{\text{shaded}}{\text{total}}$$

$$= \frac{33\pi}{100\pi}$$

$$= \frac{33}{100}$$

this is not the same
as $\frac{1}{3}$

(Total 4 marks)

5/27 The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings (£x)	Frequency	Midpoint	Subtotal
$150 < x \leq 250$	1	200	$1 \times 200 = 200$
$250 < x \leq 350$	11	300	$11 \times 300 = 3300$
$350 < x \leq 450$	5	400	$5 \times 400 = 2000$
$450 < x \leq 550$	0	500	$0 \times 500 = 0$
$550 < x \leq 650$	3	600	$3 \times 600 = 1800$
Total		20	Total
			7300

(a) Work out an estimate for the mean of the weekly earnings.

$$\text{mean} = \frac{7300}{20} = 365$$

£.....365.....
(3)

Nadiya says,

“The mean may not be the best average to use to represent this information.”

(b) Do you agree with Nadiya?
You must justify your answer.

Yes because most people are in the $250 < x \leq 350$ range so the median would be better
(1)

6/28 Here is a rectangle.

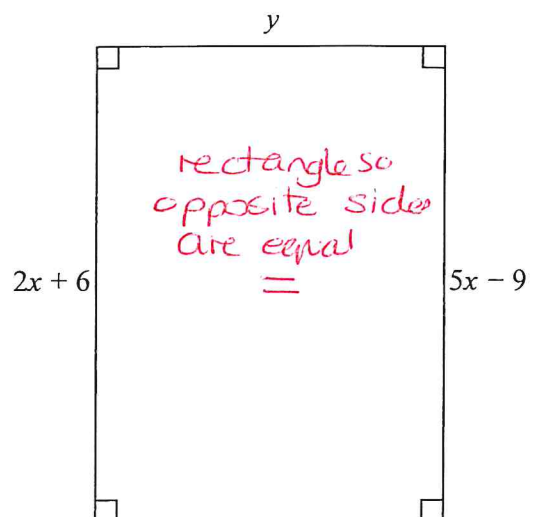
All measurements are in centimetres.

The area of the rectangle is 48 cm².

Show that $y = 3$

$$\begin{aligned} 2x + 6 &= 5x - 9 \\ 6 &= 3x - 9 \\ 15 &= 3x \\ \underline{x} &= \underline{5} \end{aligned}$$

$$\begin{aligned} \text{Area} &= y(2x + 6) \\ 48 &= y(10 + 6) \\ 48 &= y \times 16 \\ \frac{48}{16} &= y \\ \underline{\underline{y}} &= \underline{\underline{3}} \end{aligned}$$



(Total 4 marks)

TOTAL FOR PAPER IS 23 MARKS