

- 11 The table shows information about the times, in minutes, that 80 patients had to wait to see a doctor.

| Time (W minutes) | Frequency |
|---------------------|-----------|
| $0 < W \leq 10$ | 7 |
| $10 < W \leq 20$ | 10 |
| $20 < W \leq 30$ | 15 |
| $30 < W \leq 40$ | 32 |
| $40 < W \leq 50$ | 16 |

- (a) Complete the cumulative frequency table below.

| Time (W minutes) | Cumulative frequency |
|---------------------|----------------------|
| $0 < W \leq 10$ | |
| $0 < W \leq 20$ | |
| $0 < W \leq 30$ | |
| $0 < W \leq 40$ | |
| $0 < W \leq 50$ | |

(1)

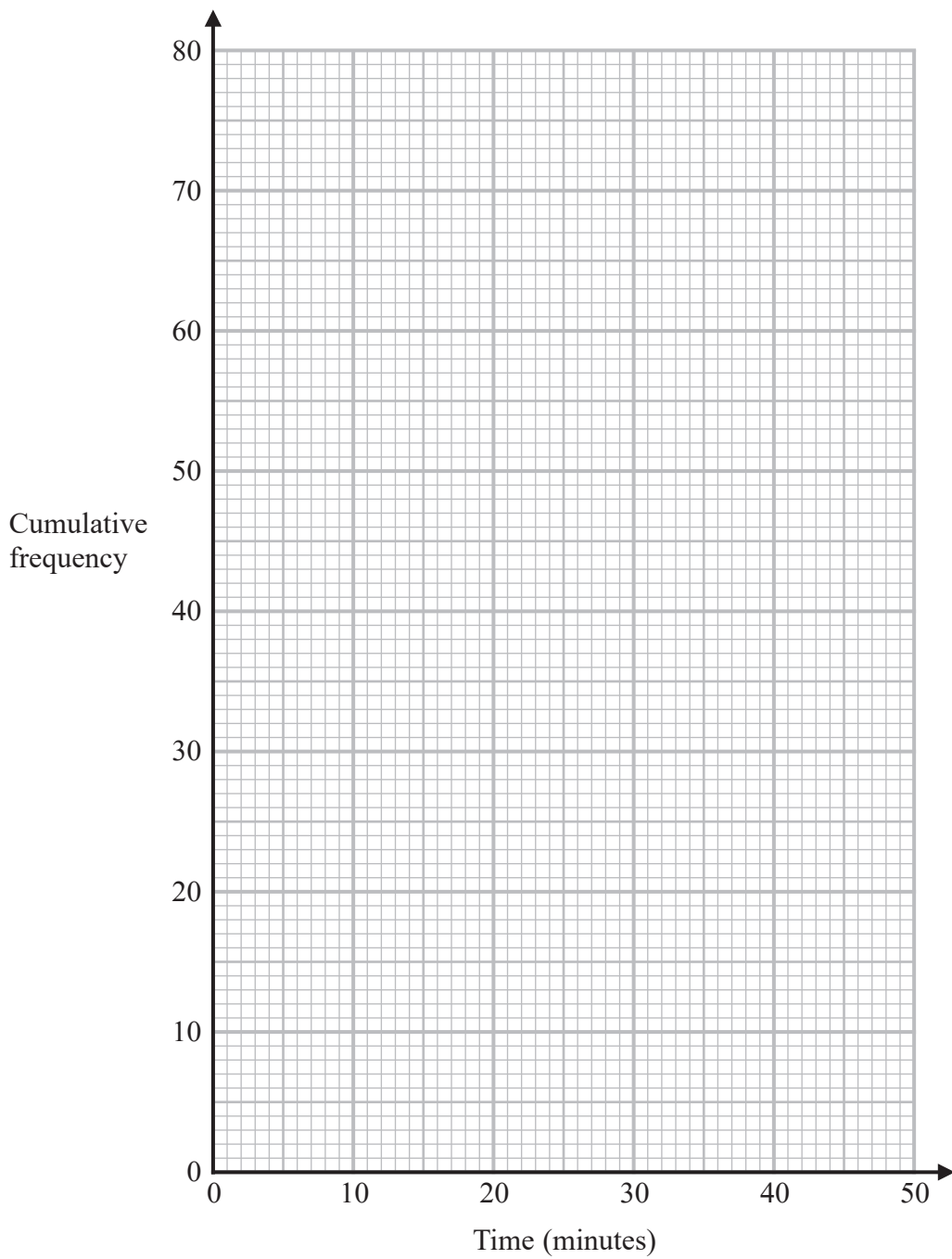
- (b) On the grid opposite, draw a cumulative frequency graph for your table.



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(2)

(c) Use your graph to find an estimate for the median.

..... minutes
(1)

(d) Use your graph to find an estimate for the interquartile range.

..... minutes
(2)

(Total for Question 11 is 6 marks)



12 Solve $2^{-4x} = 32$

$$x = \dots\dots\dots$$

(Total for Question 12 is 2 marks)

13 Use algebra to show that $0.3\dot{8}\dot{1} = \frac{21}{55}$

(Total for Question 13 is 2 marks)



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14 $T = \frac{p}{r}$

$p = 0.51$ correct to 2 significant figures.
 $r = 6.3$ correct to 2 significant figures.

Work out the upper bound for the value of T
Show your working clearly.

.....
(Total for Question 14 is 2 marks)

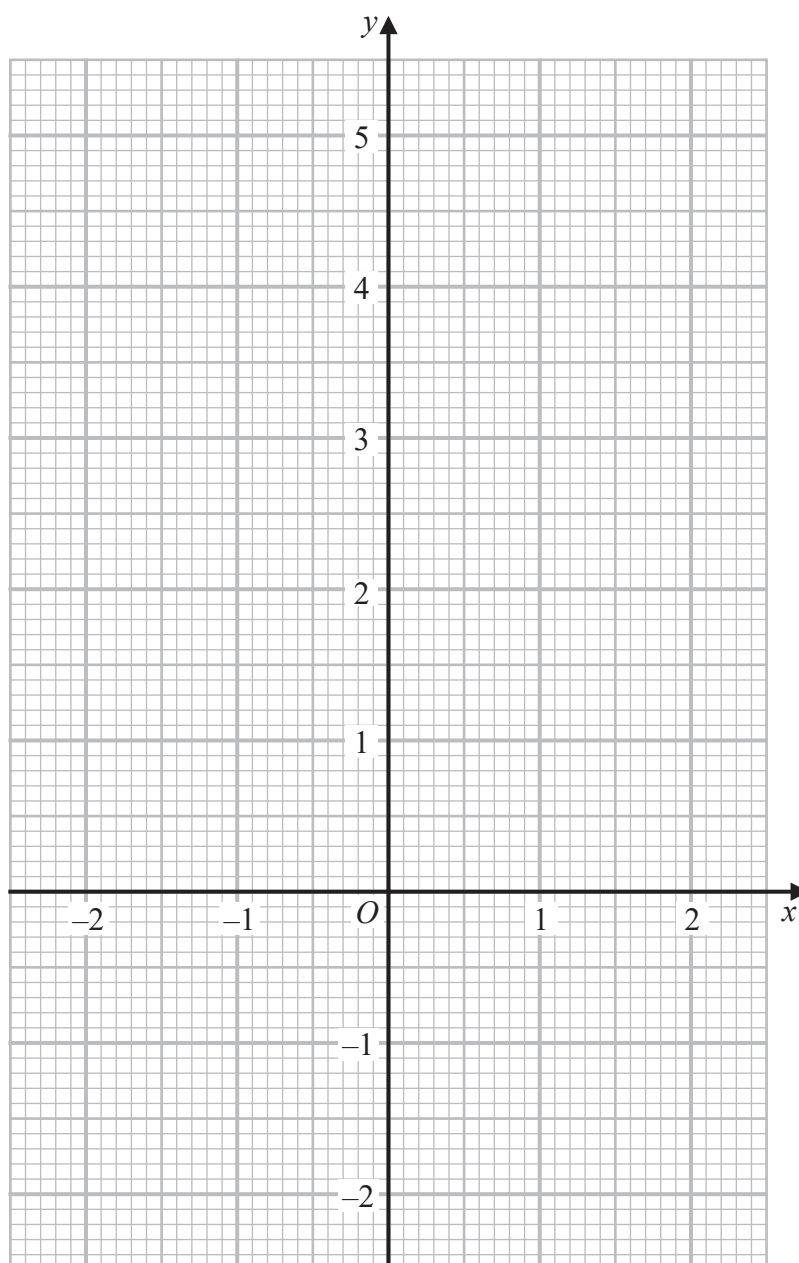


15 (a) Complete the table of values for $y = x^3 - 3x + 2$

| | | | | | | | |
|-----|----|----|------|---|---|-----|---|
| x | -2 | -1 | -0.5 | 0 | 1 | 1.5 | 2 |
| y | | 4 | 3.4 | | 0 | 0.9 | |

(2)

(b) On the grid, draw the graph of $y = x^3 - 3x + 2$ for values of x from -2 to 2



(2)



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(c) By drawing a suitable straight line on the grid, use your graph to find an estimate for the solution of

$$2x^3 - 3x + 4 = 0$$

Give your answer correct to one decimal place.

.....
(3)

(Total for Question 15 is 7 marks)



P 7 2 4 3 8 A 0 1 7 2 8

16 The function f is such that

$$f(x) = \frac{2}{3x - 5} \quad \text{where } x \neq \frac{5}{3}$$

(a) Find $f\left(\frac{1}{3}\right)$

.....
(1)

(b) Find $f^{-1}(x)$

$$f^{-1}(x) = \text{.....}$$

(2)

The function g is such that

$$g(x) = 5x^2 - 20x + 23$$

(c) Express $g(x)$ in the form $a(x - b)^2 + c$

.....
(3)

(Total for Question 16 is 6 marks)



17

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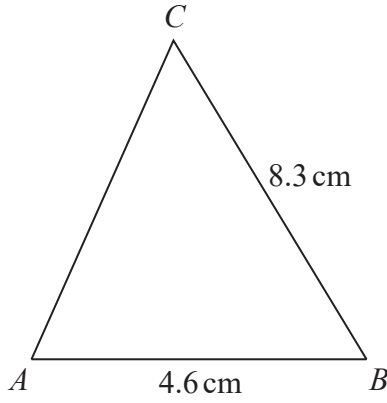


Diagram NOT accurately drawn

$AB = 4.6 \text{ cm}$ $BC = 8.3 \text{ cm}$ angle ABC is acute

The area of triangle ABC is 12 cm^2

Work out the perimeter of triangle ABC
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 17 is 5 marks)



P 7 2 4 3 8 A 0 1 9 2 8