1 Evaluate.

(a) $\sqrt{2^6}$

(a) ..... [1]

(b) $(2{\cdot}5 \times 10^5) \times (5 \times 10^3)$
Give your answer in standard form.

(b) ..... [2]

3

2 (a) Make n the subject of this formula.

$$T = n^2 + 5$$

(a) n = ... [2]

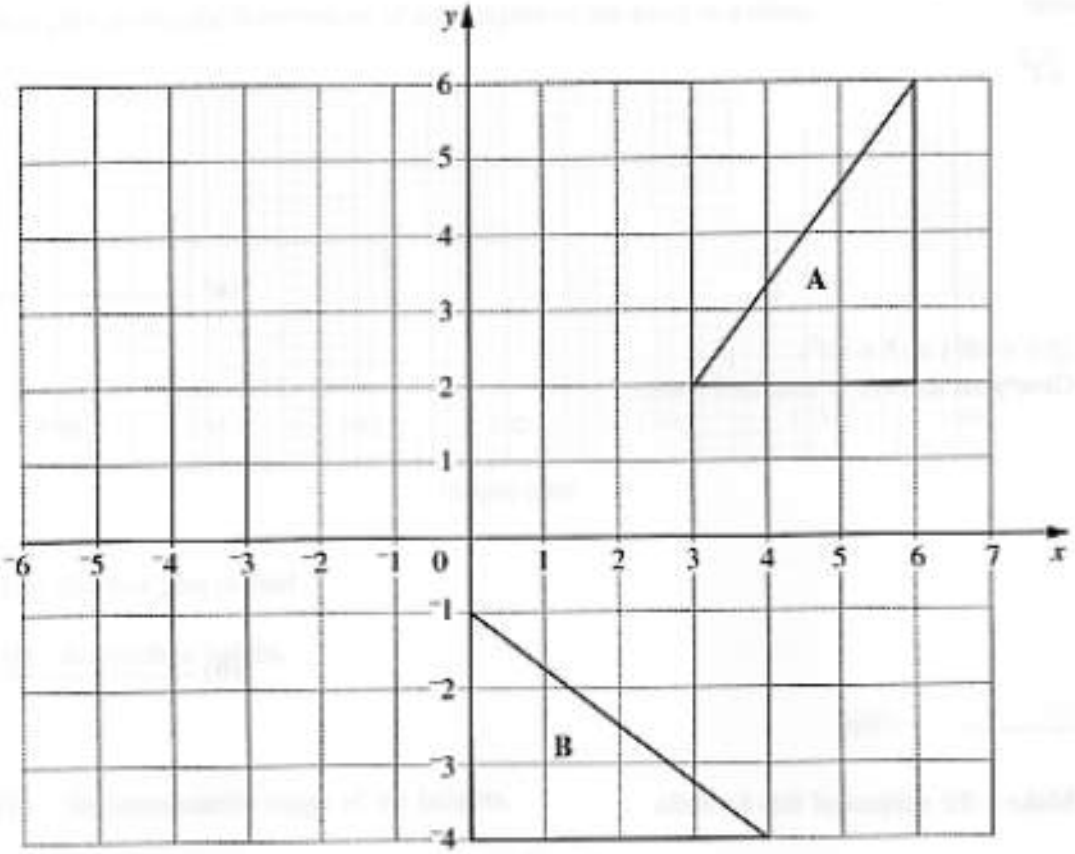
(b) Solve this equation by factorising.

$$x^2 + 7x + 10 = 0$$

(b) ..... [3]

5

3



(a) Translate triangle A by $\begin{pmatrix} -6 \\ -1 \end{pmatrix}$. [2]

(b) Describe fully the **single** transformation that maps triangle A onto triangle B.

.....

.....

.....[3]

5

4 In these expressions a, b and c represent lengths.

$$a^2 + ab + 3ac \qquad 2\pi a \qquad \frac{1}{4}\pi abc \qquad 2\pi a^2 + \pi ab$$

Which one of these expressions could represent a volume?
Show how you decide.

..... because .....

.....[2]

[2]

5 (a) You are given that $0\dot{3} = \frac{1}{3}$.

Use this information to express the following as fractions.

(i) $0\dot{1}$

(a)(i) ..... [1]

(ii) $0\dot{0}3$

(ii) ..... [1]

(b) Explain how you can tell that $\frac{11}{12}$ will be a recurring decimal.

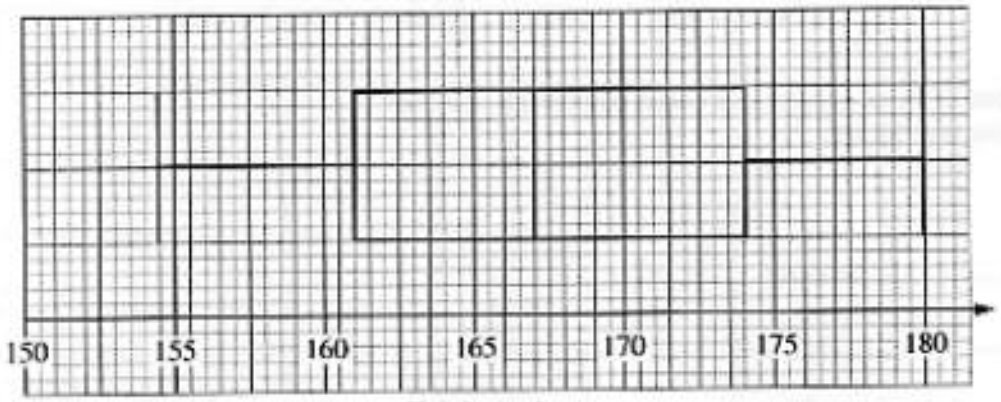
You do not need to do any calculations.

.....

.....[1]

[3]

6 This box plot shows the distribution of the heights of the boys in a class.



(a) Use this box plot to find

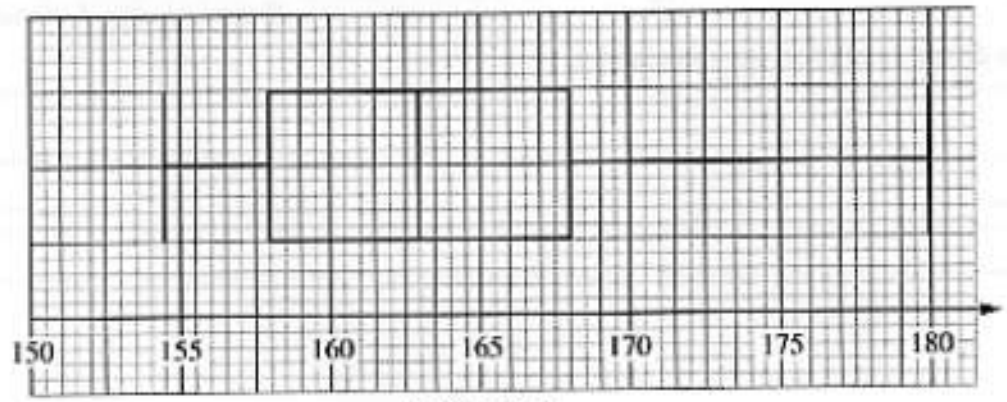
(i) the median height,

(a)(i) ..... cm [1]

(ii) the interquartile range of the heights.

(ii) ..... cm [1]

(b) This box plot shows the distribution of the heights of the girls in the same class.



Make two comments comparing the heights of the boys and girls.

1. .....[1]

2. .....[1]

4

7 Solve, algebraically, these simultaneous equations.

$$6x - y = -9$$
$$2x - 3y = 5$$

$x =$ .....

$y =$ ..... [3]

[3]