Algebra – 2023 Nov IGCSE Math 0444

1.

$$P = \frac{2wy^2}{3}$$

Find the positive value of y when $P = 108$ and $w = 2$.

$y =$ .... [3]

2.

$$T = \sqrt{3d - e}$$

Solve for d.

$d =$ .... [3]
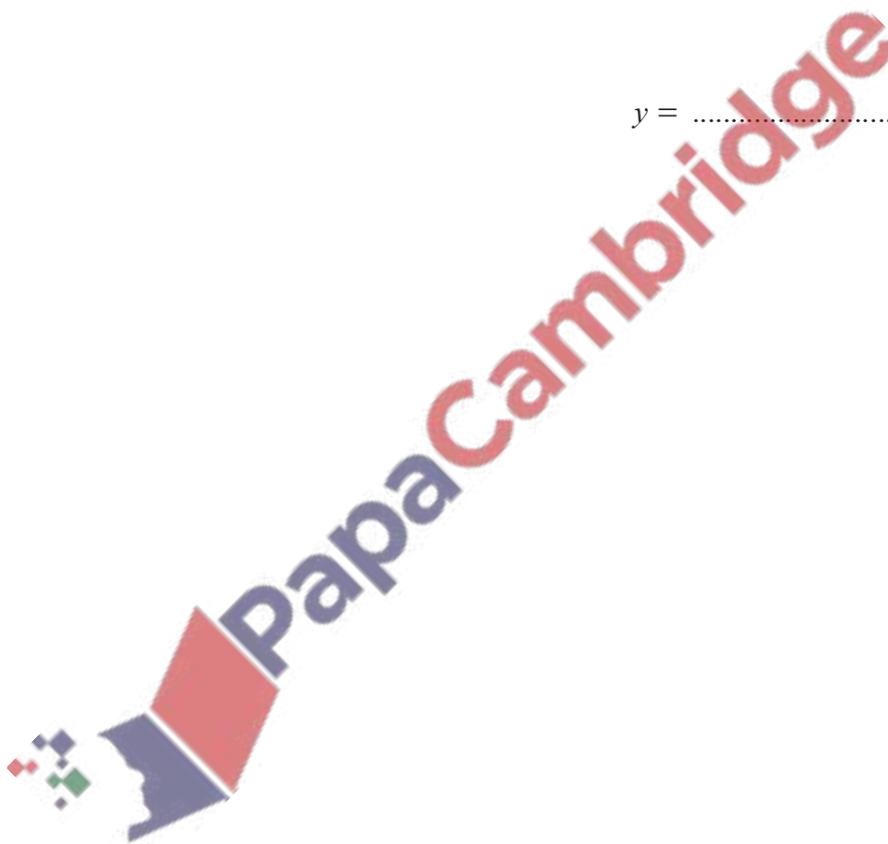
3.
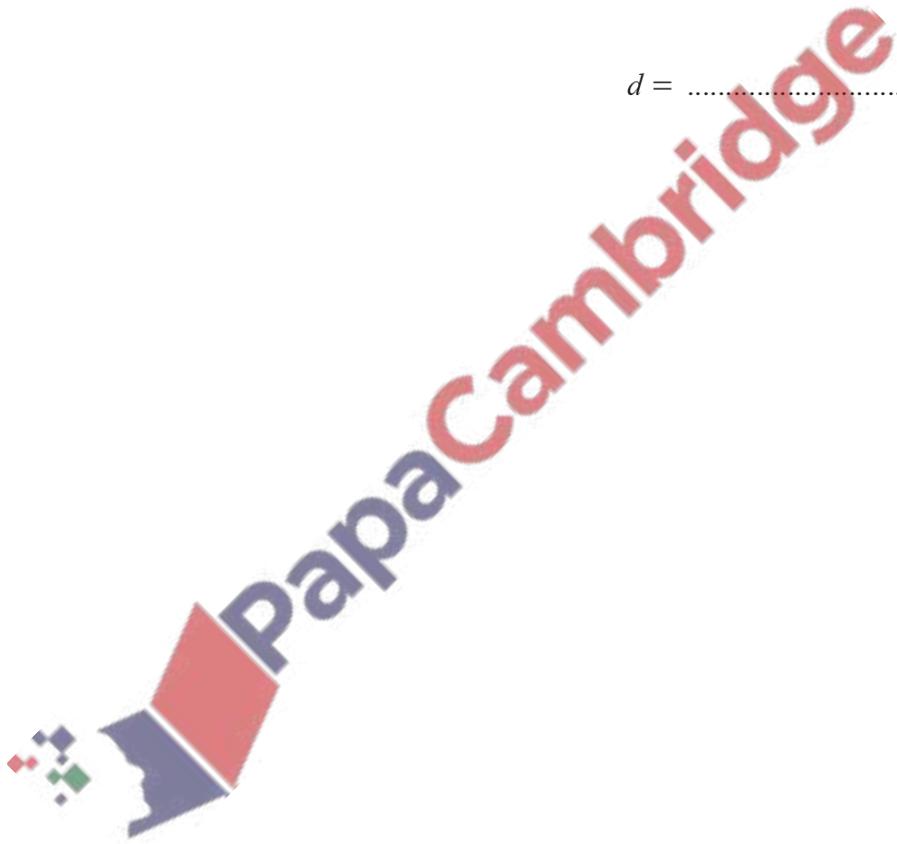
(a) Simplify.

$$\left(64y^{27}\right)^{\frac{2}{3}}$$

.... [2]

(b) Simplify.

$$\frac{x-5}{x^2-25}$$

.... [2]

3
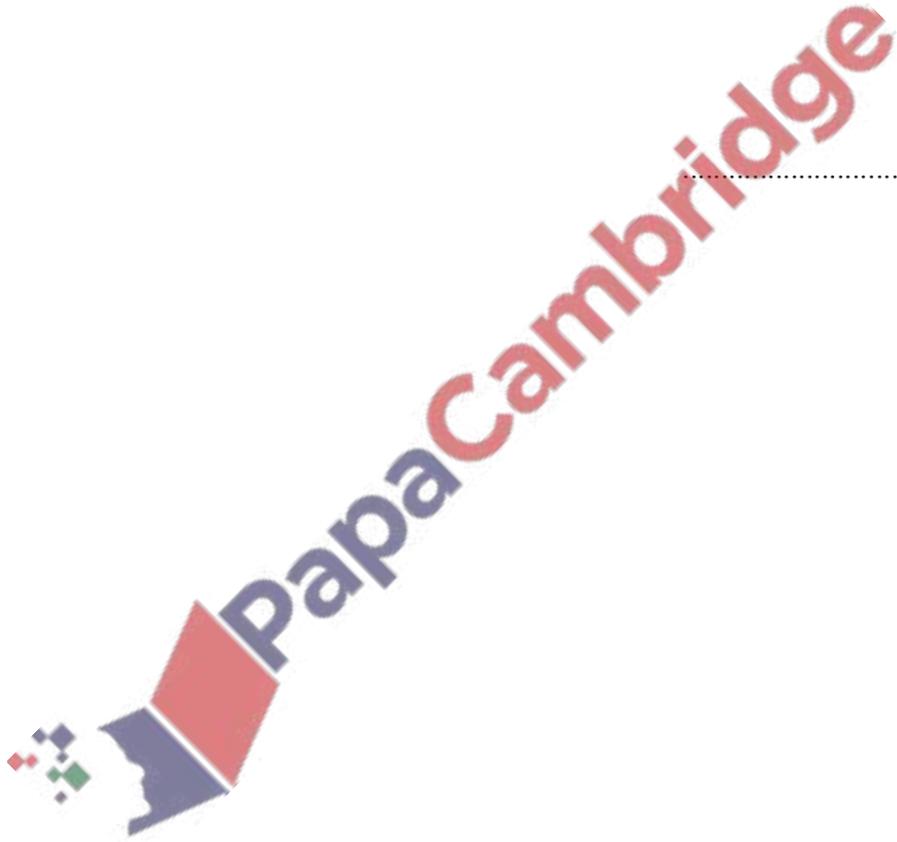
(a) Expand and simplify.

$$4(2x-1)-6(3-x)$$

.... [2]

(b) Factor completely.

(i) $6x^2y+9xy$

.... [2]

(ii) $4x^2-y^2+8x+4y$

.... [3]
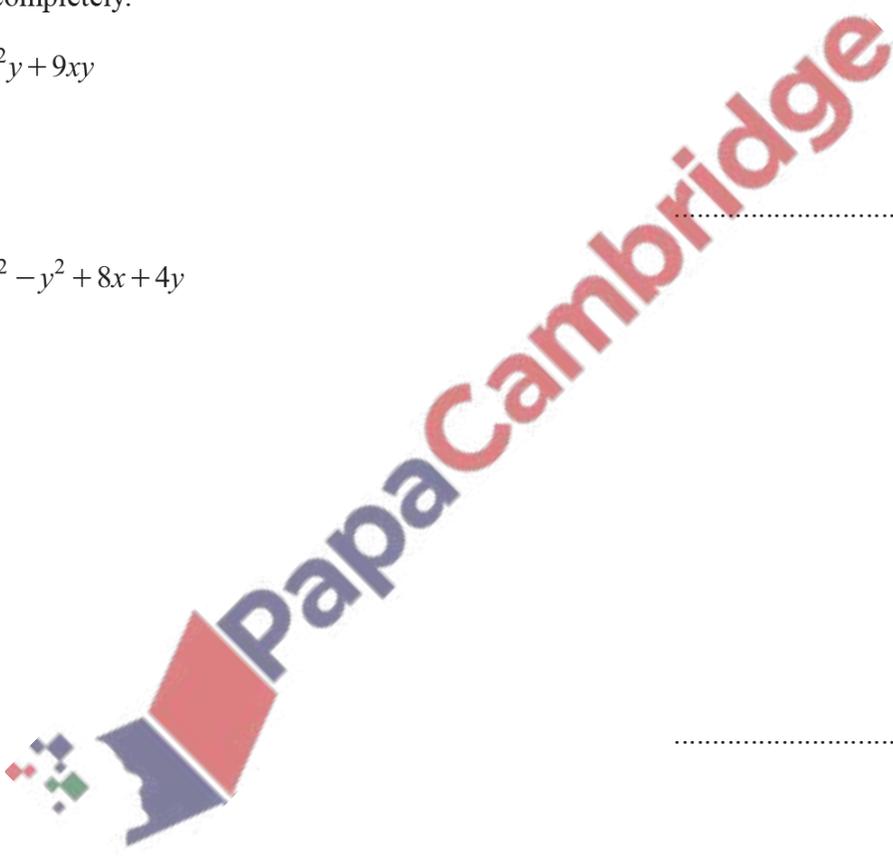
(c) Antonio travels 100 km at an average speed of x km/h.
He then travels a further 150 km at an average speed of $(x+10)$ km/h.
The time taken for the whole journey is 4 hours 20 minutes.

(i) Show that $13x^2 - 620x - 3000 = 0$.

[4]

(ii) Solve $13x^2 - 620x - 3000 = 0$ to find the speed Antonio travels for the first 100 km of the journey.
You must show all your working and give your answer correct to 1 decimal place.