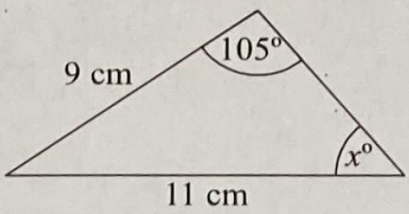
1 Solve $\frac{2}{x+3} + \frac{9}{x+7} = 1$

2



Work out the value of x.
Give your answer to 1 decimal place.

3 Given that $g(x) = 5x + 3$

Work out an expression for $g^{-1}(x)$

4 Write $7\sqrt{50}$ in the form $k\sqrt{2}$, where k is an integer.

5 Starting with $x_0 = 1$, use the iteration formula

$$x_{n+1} = \frac{4}{x_n^2 + 2}$$

three times to find an estimate for the solution to $x^3 + 2x = 4$

6 y is inversely proportional to x

When $y = 5$, $x = 0.5$

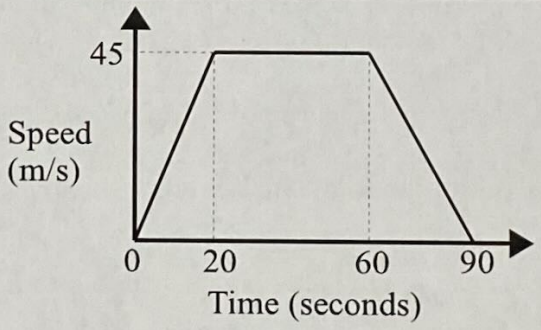
Find the value of y when $x = 0.25$

7 $V = IR$

I = 6.7 correct to 1 decimal place
R = 11.81 correct to 2 decimal places

Work out the upper bound for V.
Give your answer to 2 decimal places.

8



Calculate the acceleration in the first 20 seconds

9 A circle has the equation $x^2 + y^2 = 7$

(i) Write down the coordinates of the centre of the circle.

(ii) Write down the exact length of the radius of the circle.

10 The coordinates of the maximum point of a curve are (2, -5)

Write down the coordinates of the maximum point of the curve with equation $y = f(x) + 2$