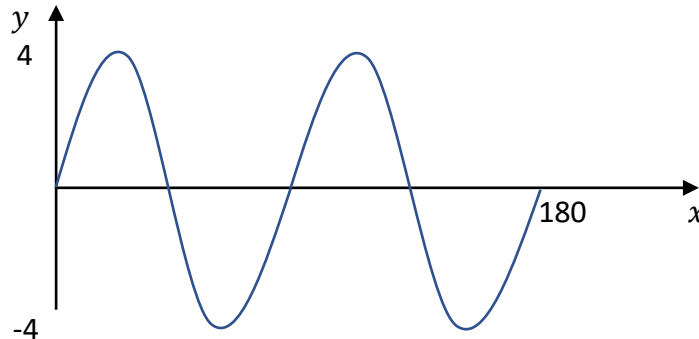
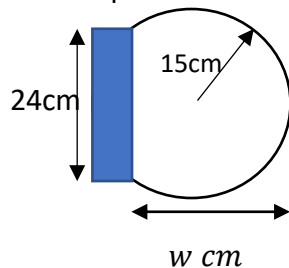


- 1a. The diagram below shows part of the graph with equation $y = a\sin bx$. State the values of a and b .



- 1b. Sketch the graph of $y = 2 \sin 3x$ for $0 \leq x \leq 360$.
2. An outdoor security lamp is being fitted to the back of a house. It will be fixed to a piece of metal measuring 30 cm.



If the radius of the shade is 15cm, calculate the width, w cm of the shade.

3. A shop is having a stock clearance.
Three pairs of shoes and four coats cost £297.
- a) Write down an equation to represent this information
- Two pairs of shoes and three coats costs £214.
- b) Write down a second equation to represent this information.
- c) Find the cost of one pair of shoes and the cost of one coat.
4. Solve: a) $2x^2 - x - 3 = 0$ b) $4x^2 - 4x - 3 = 0$ c) $3x^2 + 17x + 10 = 0$
5. State the gradient of the line with equation $2x + 5y - 9 = 0$
6. A sphere has a volume of $24\,300 \text{ cm}^3$. Calculate its radius $Volume = \frac{4}{3}\pi r^3$
7. Find the equation of the straight line passing through the points $(-3,2)$ and $(-1,5)$.