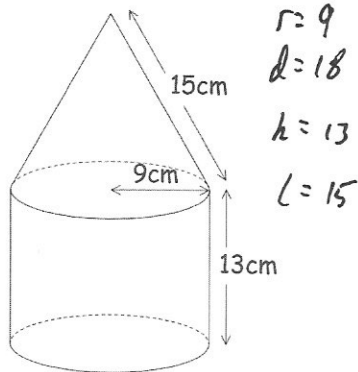




A cylinder and a cone are joined together to make a solid.
The cylinder has a radius of 9cm and height of 13cm.

The cone has a slant height of 15cm.

$$\pi r l + \pi d h + \pi r^2$$



Find the total surface area of the solid.

$$(\pi \times 9 \times 15) + (\pi \times 18 \times 13) + (\pi \times 9^2) = 1413.716694..$$

$$1413.72 \text{ cm}^2$$

Express $3x^2 + 24x - 1$ in the form $a(x + b)^2 + c$

$$\begin{aligned} & 3(x^2 + 8x) - 1 \\ & 3[(x+4)^2 - 4^2] - 1 \\ & 3[(x+4)^2 - 16] - 1 \end{aligned}$$

$$3(x+4)^2 - 48 - 1$$

$$3(x+4)^2 - 49$$

A circle has equation

$$x^2 + y^2 = 0.25$$

Write down the length of its diameter

$$r = \sqrt{0.25} = \frac{1}{2}$$

$$d = 2 \times \frac{1}{2} = 1$$

A clock has two hands.

A minute hand which is 7cm long and an hour hand which is 5cm long.

Find the distance between the tips of the two hands at 7:20am 100°

$$d^2 = 5^2 + 7^2 - 2 \times 5 \times 7 \times \cos 100$$

$$d = 9.282 \text{ cm}$$