

**RELATIONSHIPS HOMEWORK 1**

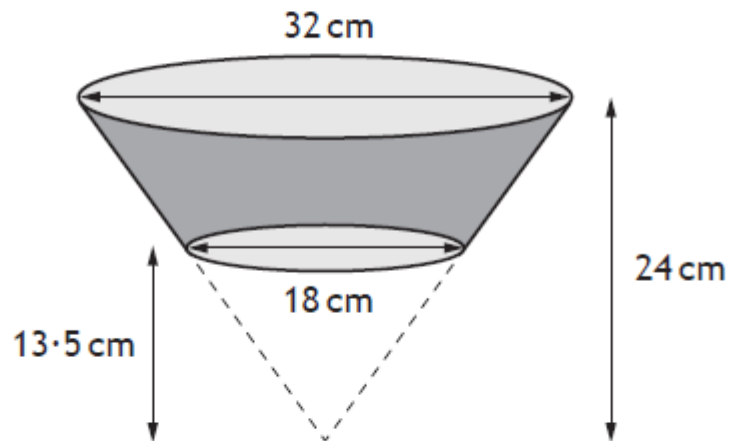
Non calculator:

Find the equation of the line joining the points  $(-2, 5)$  and  $(3, 15)$ .  
Give the equation in its simplest form.

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Calculator:

A carton is in the shape of a large cone with a small cone removed.  
The large cone has diameter of 32 cm and height 24 cm.  
The small cone has diameter of 18 cm and height 13.5 cm.



Calculate the volume of the carton.

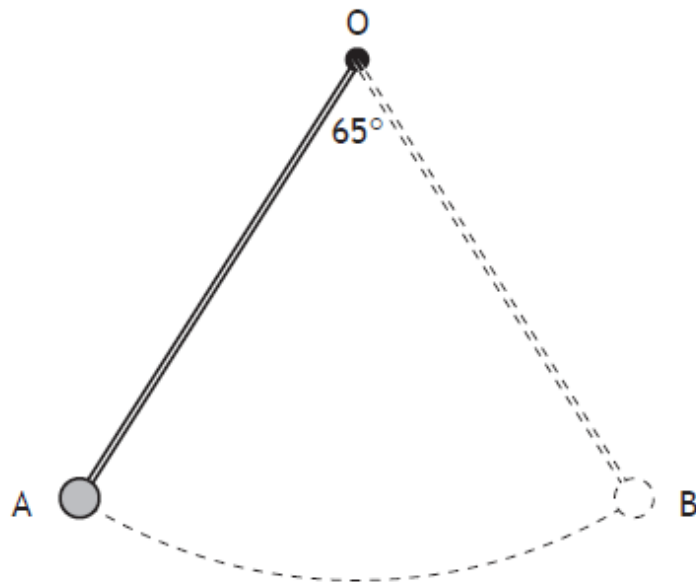
Give your answer correct to 2 significant figures.

$$\left( \text{Volume of cone: } V = \frac{1}{3}\pi r^2 h \right)$$

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Challenge Question (calculator):

The pendulum of a clock swings along an arc of a circle, centre O.



The pendulum swings through an angle of  $65^\circ$ , travelling from A to B.

The length of the arc AB is 28.4 centimetres.

Calculate the length of the pendulum.