

Pythagoras Problems

Sketch and solve the following ladder problems

A ladder has a length of 3m and its base lies 2m from a wall.
How high will it reach?

A ladder reaches 3m up a wall and its base lies 4m from the wall.

- How long is the ladder?
- If the base slips so that it is 4.5m from the wall, how high will the ladder now reach?

Coordinates

Part A

By plotting the following pairs of coordinates, find the length of the line segment joining them

(1,3) and (3,7)

(-1,2) and (3,7)

(-3,-1) and (1,-4)

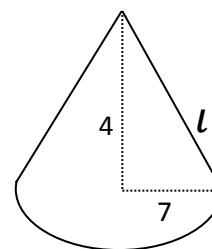
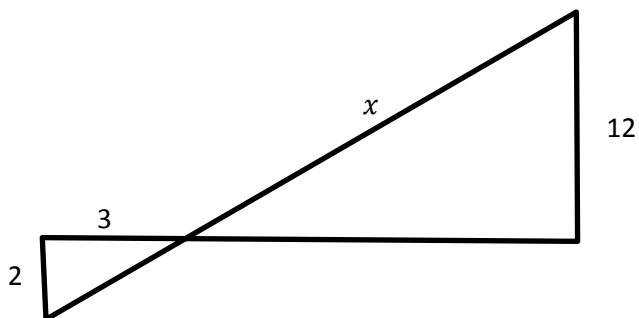
Part B

Plot the coordinates (1,3) and (3,2) and (2,5)

Find the area of the triangle

Find the perimeter of the triangle

Find the missing lengths in the following shapes



Extension:

Find the volume and the total surface area of the cone

Hint:

A cone is made up of a circular base AND a curved surface

The curved surface area = $\pi r l$

The volume of a cone = $\frac{1}{3}(\text{area of base}) \times \text{height}$