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Level 1 Mathematics and Statistics 2025

91947 Demonstrate mathematical reasoning
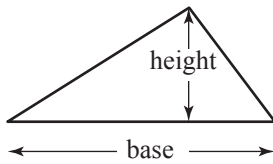
Credits: Five

RESOURCE BOOKLET

Refer to this booklet to answer the questions for Mathematics and Statistics 91947.

Check that this booklet has pages 2–3 in the correct order and that none of these pages is blank.
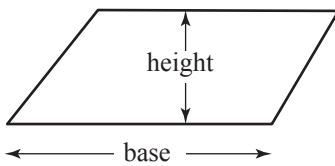
YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.
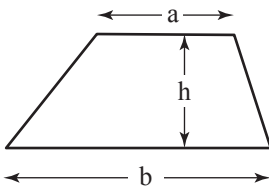
Measurement

Area of triangle $= \dfrac{1}{2} \times$ base $\times$ height

Volume of prism = area of cross section × length

Area of parallelogram = base × height
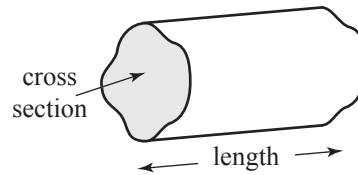
Volume of cylinder $= \pi r^2 h$

Surface area of cylinder $= 2\pi rh + 2\pi r^2$

Area of trapezium $= \dfrac{1}{2}(a+b)h$
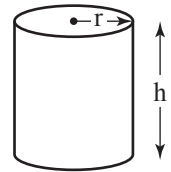
Volume of sphere $= \dfrac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$
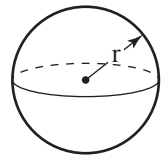
Volume of pyramid

$= \dfrac{1}{3} \times$ area of base $\times$ height

Circumference of circle $= \pi d$

$\qquad\qquad\qquad = 2\pi r$
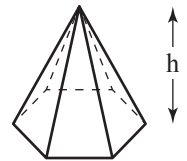
Area of circle $= \pi r^2$

$\pi = 3.14$ to 2 decimal places
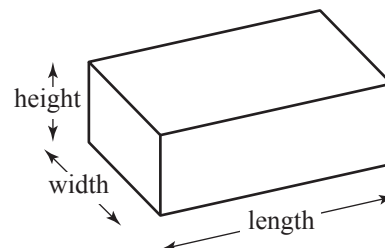

Volume of cone $= \dfrac{1}{3}\pi r^2 h$

Surface area of cone $= \pi rL + \pi r^2$
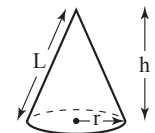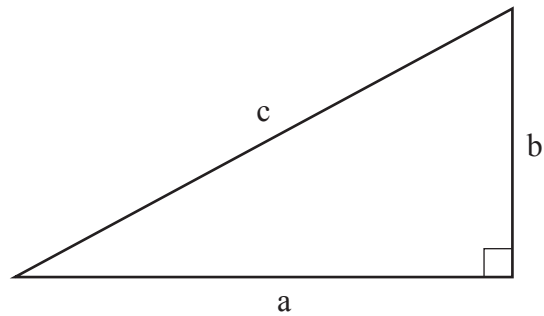

Volume of cuboid = height × width × length

Right-angled Triangles

Pythagoras' theorem

$a^2 + b^2 = c^2$

$\sin x = \dfrac{\text{opposite}}{\text{hypotenuse}}$

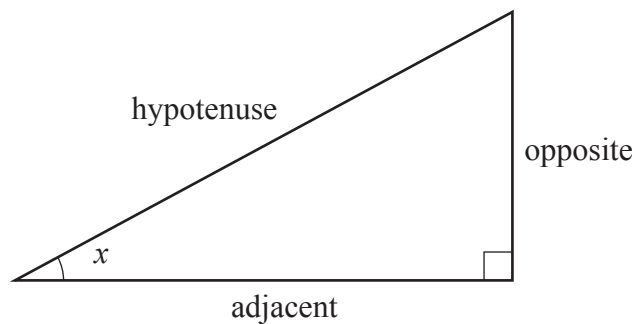$\cos x = \dfrac{\text{adjacent}}{\text{hypotenuse}}$

$\tan x = \dfrac{\text{opposite}}{\text{adjacent}}$

or

$\text{opposite} = \text{hypotenuse} \times \sin x$

$\text{adjacent} = \text{hypotenuse} \times \cos x$

$\text{opposite} = \text{adjacent} \times \tan x$

1 hectare = 10 000 m²   1 litre = 1000 cm³   1 ml = 1 cm³   1 tonne = 1000 kg

$\text{Average speed} = \dfrac{\text{total distance}}{\text{total time}}$

Sum of internal angles of an *n*-sided polygon = $(n - 2) \times 180°$

Definition of bearings: "Bearings are measured from North, in a clockwise direction."

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