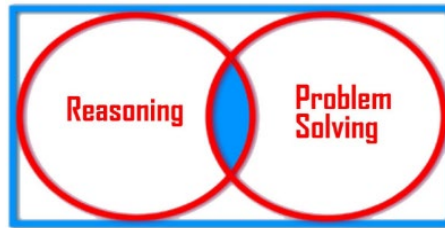


GCSE Mathematics (Grade 9-1)

Problem Solving – Sample 2

H



fluidmaths.co.uk

{Aimed at students working towards Grade 9 or 8}

The Grades and Marks shown are for guidance purposes only

You may use a Calculator for this set of questions



Round all non-terminating decimals to 3 significant figures where applicable

Strategies to help you in Mathematical Problem Solving

- Read the question carefully
- Sketch a diagram where applicable
- Take note of key information
- Write down any formulae you may need
- Tackle the problem in bite size rather than as a whole
- Concentrate on the parts of the problem that make sense to you and try to solve those first
- Collaborate with a partner and share ideas
- Use a dictionary to find the meaning of any confusing words
- Check that your answers make sense in the context of the question

Some Useful Formulae

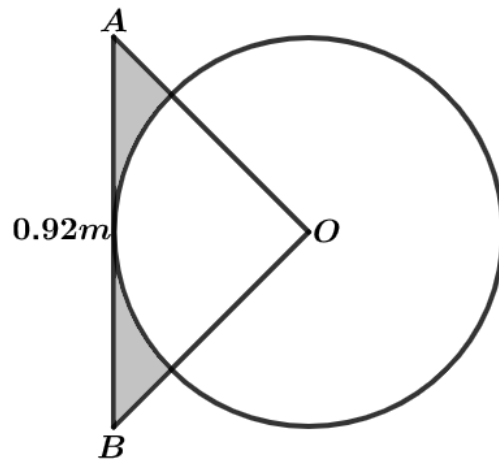
$$\text{Quadratic Formula: } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\text{the cosine rule: } a^2 = b^2 + c^2 - 2bc \times \cos A$$

$$\text{Area of a Triangle} = \frac{1}{2}ab \times \sin C$$

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

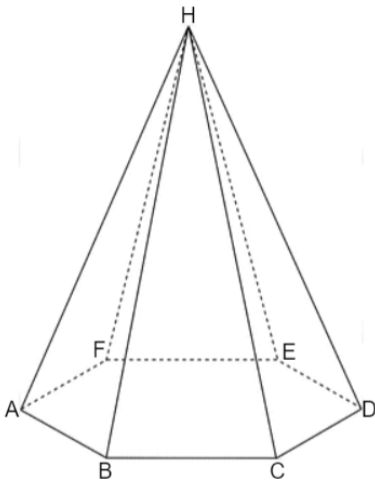
- 1 A circle of centre O and area 1.5m^2 is shown below
 In triangle ABO, $AO = BO = 0.88\text{m}$ and $AB = 0.92\text{m}$



Calculate the area of the shaded region

[5Marks]

4 A hexagonal based pyramid is shown below
 Where $HA = HB = HC = HD = HE = HF = 7\text{cm}$



The area of the base is 30cm^2 and the volume of the pyramid is 65cm^3 . Calculate the angle between the side HD and the base of the pyramid. Give your answer to the nearest degree.

[4Marks]
