

ELGIN ACADEMY

Prelim Examination 2008 / 2009

MATHEMATICS Standard Grade - General Level

Paper II

Time Allowed - 55 minutes

First name and initials

Surname

Class

Teacher

Read Carefully

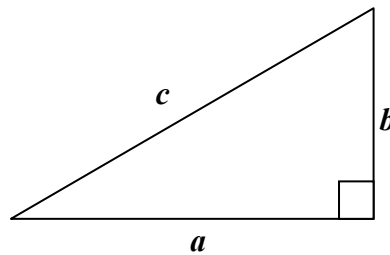
1. Answer as many questions as you can.
2. Write your answers in the spaces provided .
3. Full credit will be given only where the solution contains appropriate working.
4. **You may use a calculator**

	KU	RE
Total Marks for Paper 1		
Total Marks for Paper 2		
Total Marks for General		

FORMULAE LIST

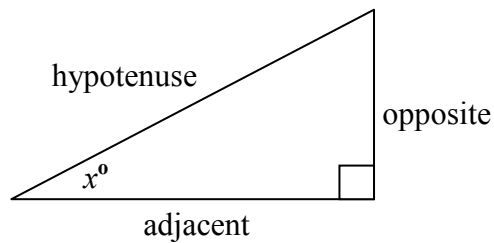
Circumference of a circle:	$C = \pi d$
Area of a circle:	$A = \pi r^2$
Curved surface area of a cylinder:	$A = 2\pi r h$
Volume of a cylinder:	$V = \pi r^2 h$
Volume of a triangular prism:	$V = Ah$

Theorem of Pythagoras:



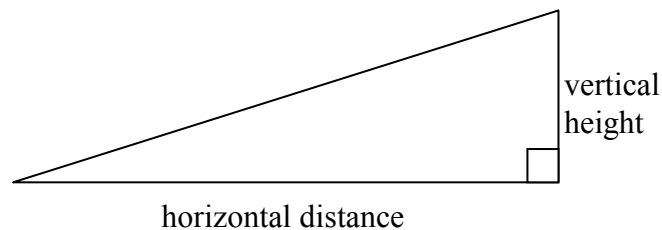
$$a^2 + b^2 = c^2$$

Trigonometric ratios
in a right angled
triangle:



$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$
$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$
$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

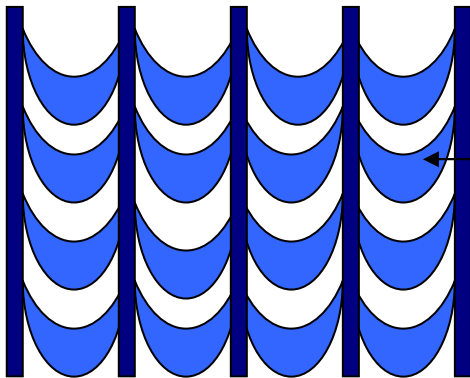
Gradient:



$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

KU	RE
(2)	
(2)	
(2)	

3.



The 'Shoe Tidy' shown opposite is made up from wall brackets and pouches.

Pouch


Wall bracket

(a) Complete the table below.

Number of wall brackets (w)	2	3	4	5		12
Number of pouches (p)	4	8				

(b) Write down a formula for calculating the number of pouches (p) when you know the number of wall bars (w).

(c) If there are 72 pouches to be hung, calculate the number of wall brackets needed.

		KU	RE
<p>4. To make a smoothie for herself and her two friends, Millie used 6 strawberries, 2 bananas, 45 ml of honey and 300 ml of milk.</p> <p>Calculate how much honey would be needed to make smoothies for five people.</p> 			
	(3)		
<p>5. Dr Lau and his family drove 98 miles from Airdrie to Stranraer to catch the ferry for Ireland.</p> <p>The ferry is due to leave Stranraer at 1415.</p> <p>If Dr Lau leaves Airdrie at 1215 and travels at an average speed of 56mph will they be on time for the ferry?</p>			
	(4)		
<p>6. Sharez bought a car for £8990 and sold it 6 months later for £6293.</p> <p>Calculate his percentage loss.</p>			
	(3)		

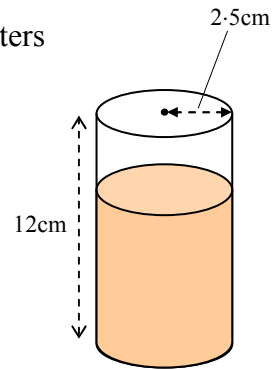
KU

RE

7. Pink Lemonade is poured into a cylindrical glass, with radius 2.5cm and height 12cm, until the glass is three quarters full.

Calculate the volume of lemonade in the glass.

Give your answer correct to the nearest 10 cm^3



(5)

8. A group of students were asked how many times per week they used the local sports amenities during the last month.

Number of visits	Frequency	Number of visits x Frequency
0	12	
1	55	
2	38	
3	7	
4	5	
5	1	
	Total = 118	Total =

Complete the table above and find the mean number of visits.

(3)

9. Max wants to build the toy boat shown in diagram 1. The sail is made from a piece of cloth in the shape of an isosceles triangle as shown in diagram 2.

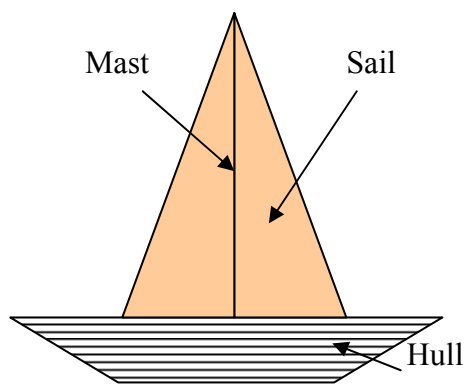


Diagram 1

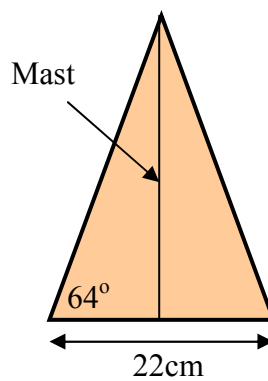
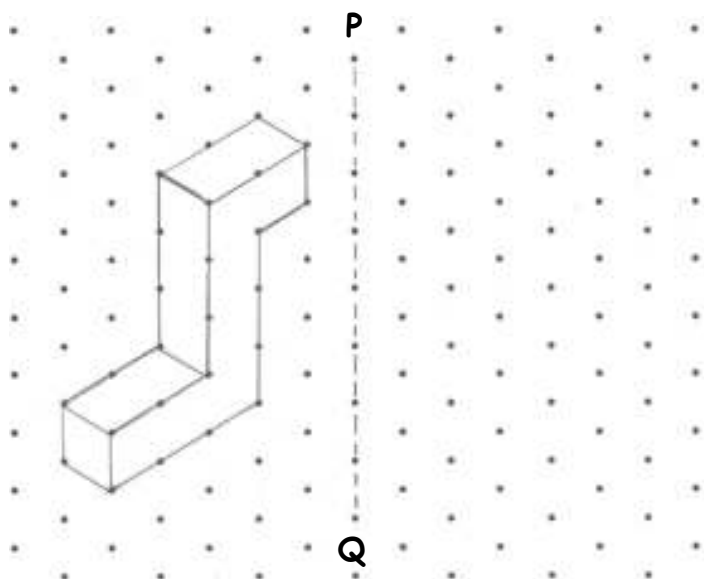


Diagram 2

Max also has a thin strip of wood measuring 24cm to make the mast. Is this piece of wood long enough?

(4)

10. Draw the image of the shape reflected in the line PQ.



(3)

