

ELGIN ACADEMY

Prelim Examination 2007 / 2008

MATHEMATICS Standard Grade - General Level Paper 1

Time Allowed - 35 minutes

First name and initials

Surname

Class

Teacher

Date:

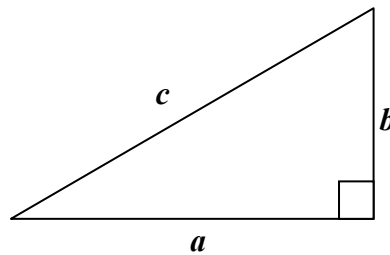
Read Carefully

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 not use a calculator**

FORMULAE LIST

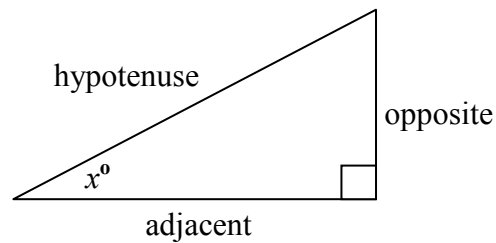
Circumference of a circle:	$C = \pi d$
Area of a circle:	$A = \pi r^2$
Curved surface area of a cylinder:	$A = 2\pi r h$
Volume of a cylinder:	$V = \pi r^2 h$
Volume of a triangular prism:	$V = Ah$

Theorem of Pythagoras:



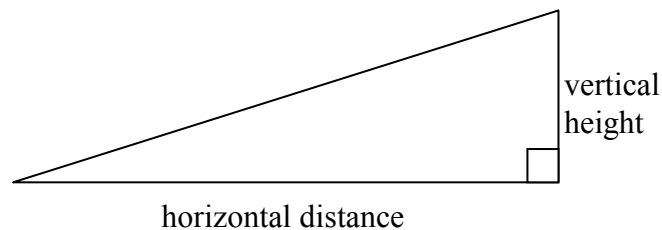
$$a^2 + b^2 = c^2$$

Trigonometrical ratios
in a right angled
triangle:

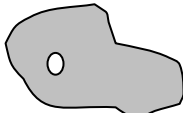


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$
$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$
$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Gradient:

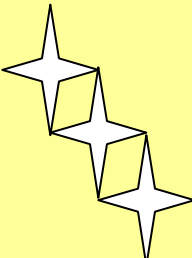


$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

		KU	RE
<p>1. Carry out the following calculations.</p> <p>(a) $5.36 - 2.764$</p> <p>(b) $225 \div 6$</p> <p>(c) 21.7×600</p> <p>(d) $7 \times 3\frac{1}{3}$</p>	(1)		
	(1)		
	(1)		
	(1)		
	(2)		
<p>2. An amoeba can travel at a speed of 1.7×10^{-3} millimetres per second.</p> <p>Write this number in full.</p> 	(2)		
<p>3. During 2007 the maximum temperature recorded at Glasgow Airport was 31° Celsius.</p> <p>The minimum temperature recorded was -18° Celsius.</p> <p>Find the difference between these two temperatures.</p>	(2)		

4. Shown below is a flyer advertising a new dance class.

Sparkles Dance Classes

Ballet	36 minutes	
Tap	54 minutes	
Modern	25 minutes	
Disco	50 minutes	
Cheerleading	18 minutes	

Megan decides to take **three** different classes and dance for at least 1 hour and 40 minutes, but no longer than 2 hours.
 One possible combination of classes that she could choose is shown below.
 Complete the table to show all possible combinations of three different classes Megan could choose.

Ballet	Tap	Modern	Disco	Cheerleading	Total Time (minutes)
✓		✓	✓		111

(4)

		KU	RE
7.	Verina Wiliams hit 20 tennis serves and the speed of each serve was recorded. The results, in miles per hour, are shown below.		
	64 86 102 95 74 91 108 62 75 82		
	81 93 79 77 69 86 55 73 77 71		
(a)	Construct a stem and leaf diagram to illustrate this information.		
		(3)	
(b)	What was the range of speeds of her serves?		
		(1)	
(c)	What was the median speed?		
		(2)	

