

ELGIN ACADEMY

Prelim Examination 2008 / 2009

MATHEMATICS

Standard Grade - General Level
Paper I

Time Allowed - 35 minutes

First name and initials

Surname

Class

Teacher

Read Carefully

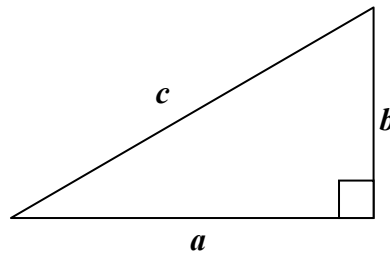
1. Answer as many questions as you can.
2. Write your answers in the spaces provided.
3. Full credit will be given only where the solution contains appropriate working.
4. **You may not use a calculator**

	KU	RE
Total Marks for Paper 1		

FORMULAE LIST

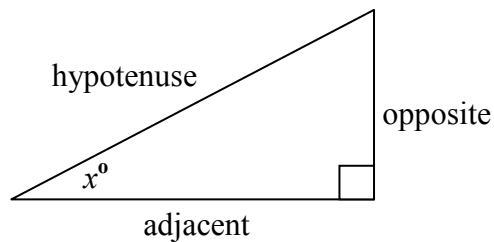
Circumference of a circle:	$C = \pi d$
Area of a circle:	$A = \pi r^2$
Curved surface area of a cylinder:	$A = 2\pi r h$
Volume of a cylinder:	$V = \pi r^2 h$
Volume of a triangular prism:	$V = Ah$

Theorem of Pythagoras:



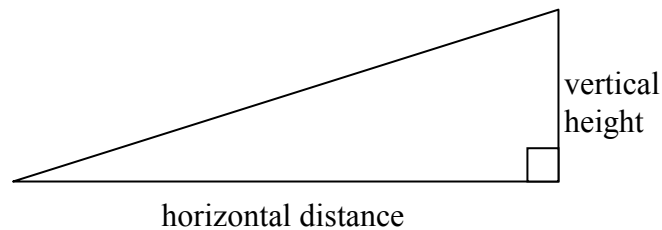
$$a^2 + b^2 = c^2$$

Trigonometric ratios
in a right angled
triangle:


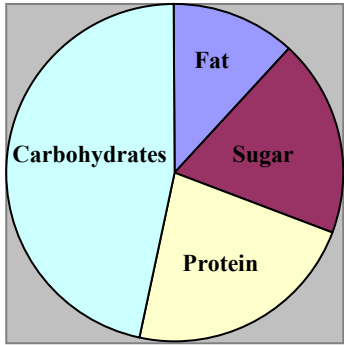


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$
$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$
$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

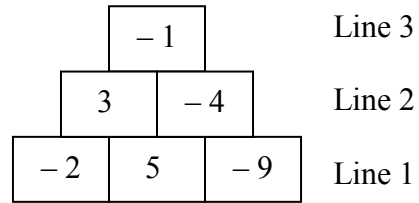
Gradient:



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

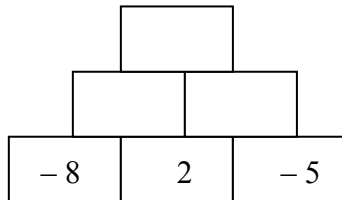
		KU	RE
<p>1. Carry out the following calculations.</p> <p>(a) $23.56 - 5.18 + 2.43$</p> <p>(b) $4.75 \div 50$</p> <p>(c) 7.78×8</p> <p>(d) $\frac{5}{7}$ of 497</p>	(1)		
	(1)		
	(1)		
	(1)		
	(2)		
<p>2. The population of the United States of America is approximately 304 000 000.</p> <p>Write this number in scientific notation.</p> 	(2)		
<p>3. 100 students were asked which food they believed would be best to eat before exercising over a long period.</p> <p>The results are shown opposite.</p> <p>Write down which group is the mode.</p>	(1)	<p>Power Food Groups</p> 	

4. In the addition wall shown opposite,
 Line 2 is formed by adding the 2 cells
 directly below in Line 1. ($-2 + 5 = 3$)
 Line 3 is formed by adding the 2 cells
 directly below in Line 2. ($3 + (-4) = -1$)



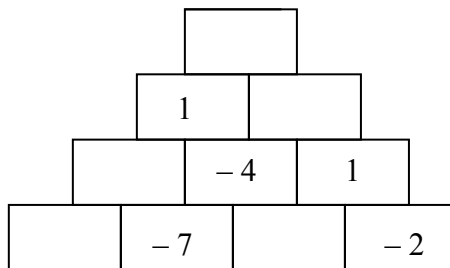
Using the same rules as above complete the walls below.

(a)



(2)

(b)



(3)

5. Two coaches per day run from Hamilton to Winchester.
 They both have the same journey time.

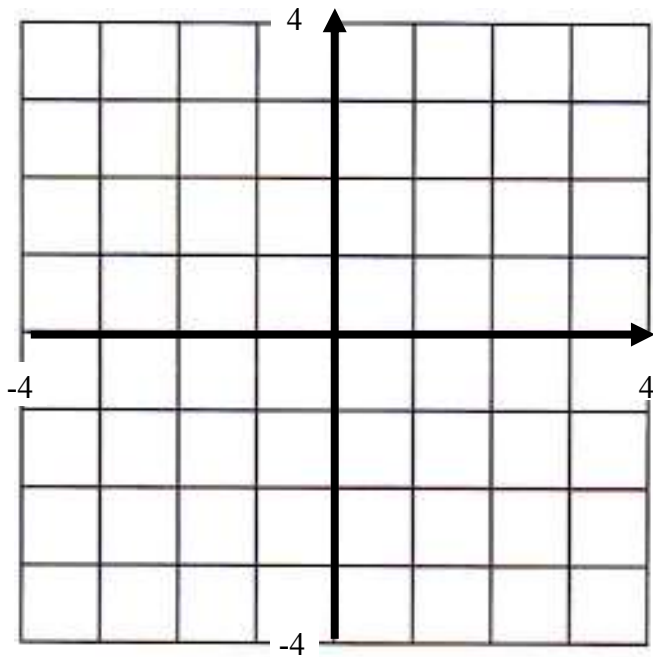
	Coach 1	Coach 2
Hamilton	0845	1524
Winchester	1534	

Find the time coach 2 arrives in Winchester.


(3)

	KU	RE
(1)		
(4)		
(3)		

6. (a) On the grid shown below plot and label the points $A(-1, 0)$ and $B(3, -3)$.

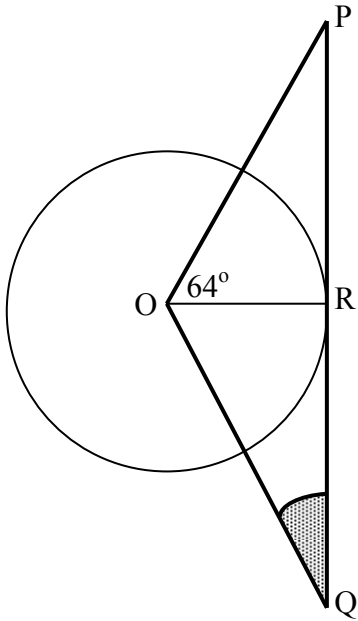


(b) Calculate the length of the line joining A and B.
DO NOT MEASURE.

7.  The original price of a sofa is £700.
Sophie calculated that it would cost £490 in the sale.
Was she correct? [You should show all your working]

		KU	RE
8.	Bilco DVD Rental offers 20 films for £4.99 per month in a variety of packages shown below.		
	Package 1 : 6 × Horror, 5 × Action, 5 × Sci-Fi and 4 × Comedy.		
	Package 2 : 7 × Romance, 5 × Musicals, 4 × Comedy and 4 × Cartoon.		
	Package 3 : 4 × Action, 4 × Comedy, 4 × Horror and 8 × Cartoon.		
(a)	If Sally choose Package 1, what would be the probability of her randomly choosing a horror film?		
		(1)	
(b)	If Sally chose Package 3, what would be the probability of her NOT choosing a cartoon ?		
		(2)	

9.



In the diagram shown with circle centre O,

1. Triangle OPQ is isosceles.
2. Angle ROP is 64° .
3. PQ is a tangent at R.

Calculate the size of the shaded angle RQO.

KU

RE

(2)

END OF QUESTION PAPER