

ELGIN ACADEMY

Prelim Examination 2005 / 06

<p style="text-align: center;">MATHEMATICS National Qualifications - Intermediate 1 Maths Units 1, 2 and 3 Paper 1 (non-calculator)</p>

Time allowed - 35 minutes

Fill in these boxes and read carefully what is printed below

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

--	--	--	--	--	--

Candidate number

--	--	--	--	--	--	--	--	--	--

Seat number

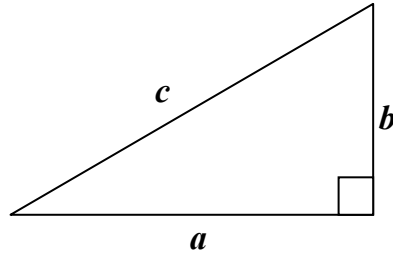
1. You may **NOT** use a calculator.
2. Write your working in the spaces provided.
3. Full credit will be given only where the solution contains appropriate working.

FORMULAE LIST

Circumference of a circle: $C = \pi d$

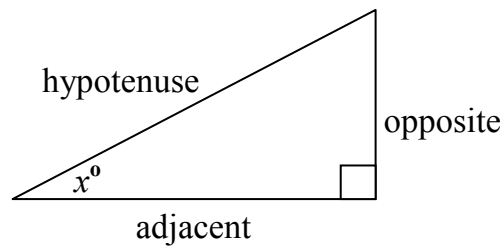
Area of a circle: $A = \pi r^2$

Theorem of Pythagoras:



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

Trigonometric ratios in a right angled triangle:



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

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

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

All questions should be attempted

Marks

1. (a) Find 3.25×7 .

1

(b) Find $\frac{2}{3}$ of 126m

1

(c) Find $4.38 \div 6$

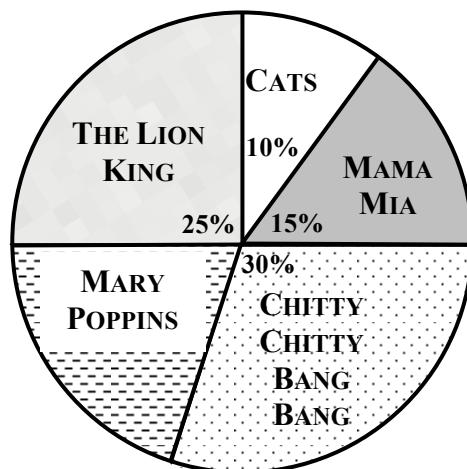
1

2. When a plane left Glasgow at Christmas to go to Lapland the temperature was 3°C . By the time it landed in Lapland the temperature had fallen by 22°C .

What was the temperature in Lapland?

1

3. In London's theatreland a group of people were asked to say what their favourite musical was and this pie chart was drawn.



If 1250 people were asked altogether, how many people said that Mary Poppins was their favourite musical?

3

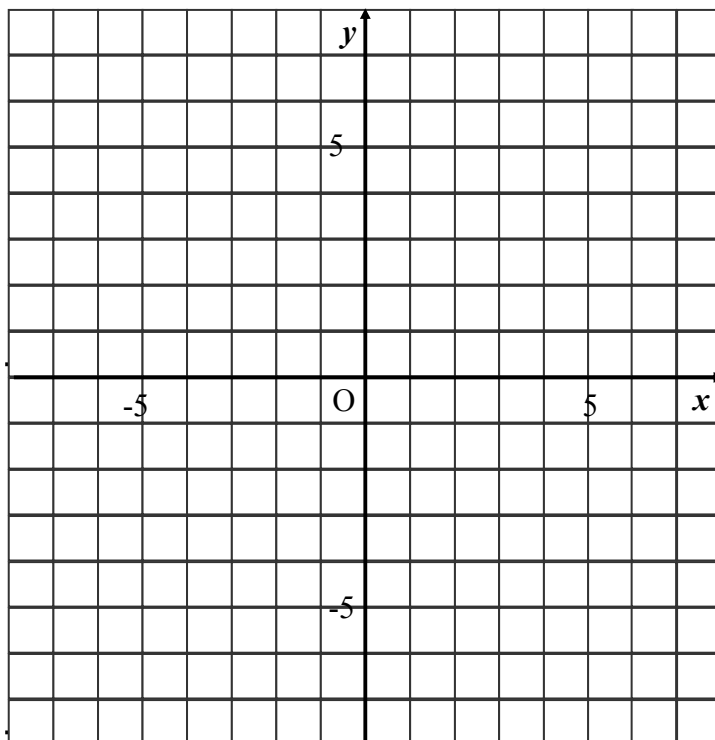
4. Andrew, the window cleaner, takes 12 minutes to clean the 8 windows in my neighbour's house.

Working at the same rate, how long will it take him to clean the 18 windows in my house?

3

5. (a) On the coordinate diagram below plot the points:

$K(-6, -4)$, $L(-6, 5)$ and $M(4, 5)$



(b) The 3 points above are the corners of a rectangle. On the same diagram plot the point N which is the fourth corner of the rectangle.

(c) Write down the coordinates of N.

6. Solve, algebraically, the equation: $7a - 2 = 4 + a$

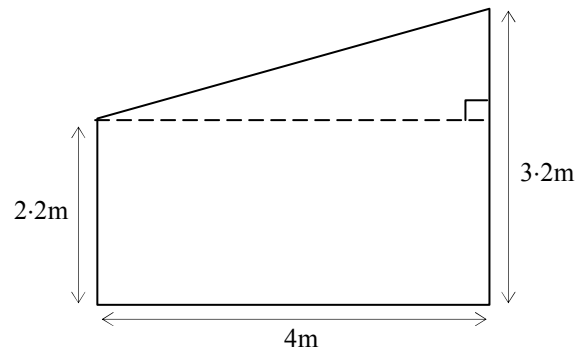
2

1

1

3

7. The Anderson Family have just built a sun room onto their house. The side wall is glass and is in the shape of a rectangle and a right angled triangle.



Calculate the area of glass needed to construct the side wall.

8. A letter is chosen from the word: **SCOTTISH**

What is the probability that it will be a 'T'? Give your answer in its simplest form.

4

2

9. (a) Multiply out the brackets and simplify:

$$9d - 5(4 - 3d)$$

2

- (b) Factorise: $4x + 24y$

2

10. Solve the inequality: $5y - 3 < 17$

2

END OF QUESTION PAPER