

ELGIN ACADEMY

Prelim Examination 2007 / 08

<p>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

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Candidate number

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Seat number

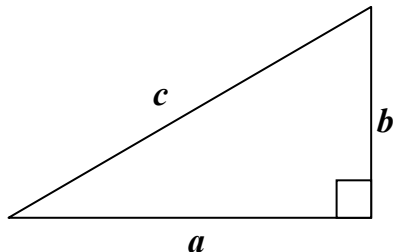
1. You may **NOT** use a calculator.
2. Write your working in the spaces provided.
3. Full credit will be given only where the solution contains appropriate working.

FORMULAE LIST

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

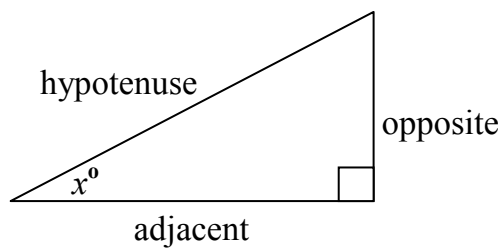
Area of a circle: $A = \pi r^2$

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 $235.4 - 47.89$

1

(b) Find $\frac{7}{8}$ of £48

1

(c) Change 40% to a fraction in its simplest form.

1

(d) Find $3 \times (-6) \div (-2)$

1

2. The largest ever football crowd in Britain was recorded at Hampden Park in 1937 when 149 415 spectators watched a Scotland v England match.

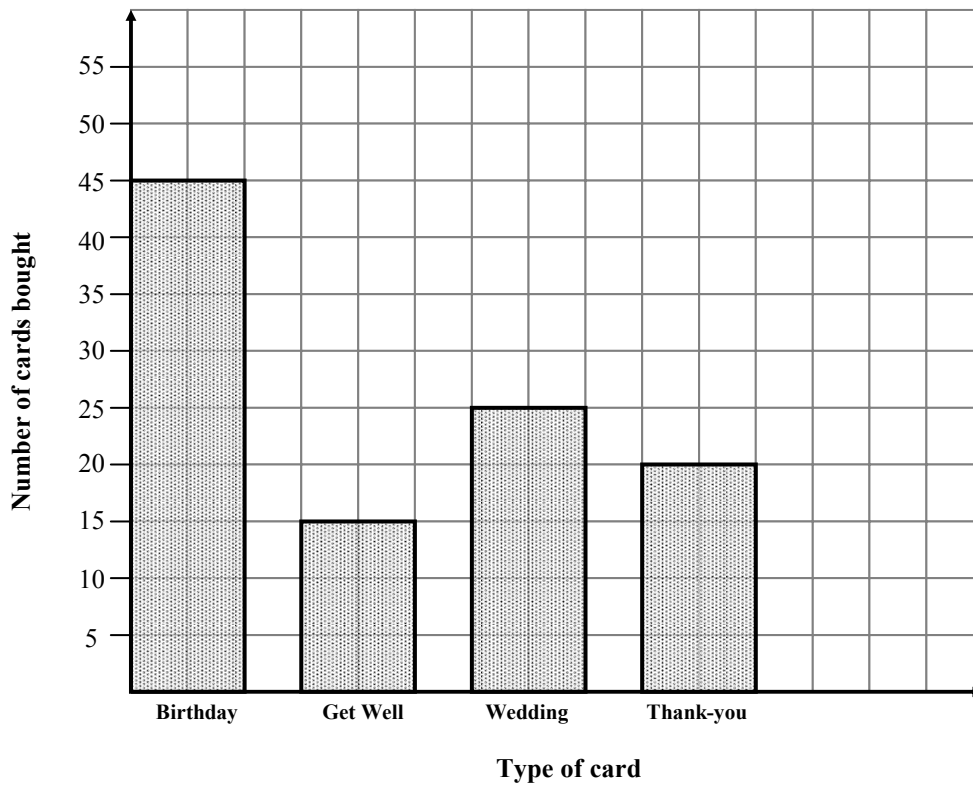
(a) Round 149415 to the nearest thousand.

1

(b) Write this rounded number in standard form.

2

3. The bar chart shows the types of greetings cards sold in a shop during one Saturday.



(a) There were also 10 Congratulations cards sold. Add a bar to the chart to show this.

1

(b) What was the most popular card bought?

1

(c) How many **fewer** Get Well cards were sold than Wedding cards?

1

(d) What is the probability that a person chosen at random would have bought a birthday card?
Write your answer in its simplest form.

3

4. In the game of golf, scores are recorded as either under, on or over par.
Par is the number of strokes that a player should take to go round the course.

The following scores were recorded by a player over 10 matches.

0 -5 -7 -2 +3 -1 -4 0 -5 +5

Calculate the player's mean score for these matches.

4

5. (a) Multiply out the brackets and collect like terms

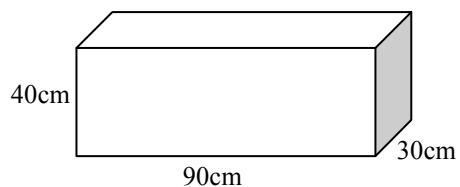
$$17 + 4(3p - 2) + 3p$$

3

- (b) Factorise $15 - 25m$

2

6. A fish tank is in the shape of a cuboid with dimensions as shown in the diagram.
John wants to fill it up from bottles of water which each hold 1litre of water.
How many bottles will it take to fill the tank half full? ($1000\text{cm}^3 = 1 \text{ litre}$)



3

7. Solve the inequality $4t - 5 > 15$

2

8. Find the value of $3a - 2b$ when $a = -4$ and $b = 2$.

3

END OF QUESTION PAPER