

Total Marks for Paper 1	
Total Marks for Paper 2	
Total Marks for Intermediate 1	

# ELGIN ACADEMY

*Prelim Examination 2008 / 09*

<p><b>MATHEMATICS</b></p> <p><b>National Qualifications - Intermediate 1</b></p> <p><b>Maths Units 1, 2 and Applications</b></p> <p><b>Paper 2</b></p>
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**Time allowed - 55 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 use a calculator.
2. Write your working in the spaces provided.
3. Full credit will be given only where the solution contains appropriate working.

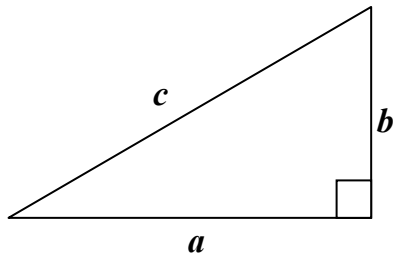
## FORMULAE LIST

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

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

Curved surface area of a circle:  $A = 2\pi r h$

Theorem of Pythagoras:



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

**All questions should be attempted**

*Marks*

1. An intercity bus leaves Glasgow at 2250 and arrives in London at 0935 the next morning.

(a) How long does the journey take?

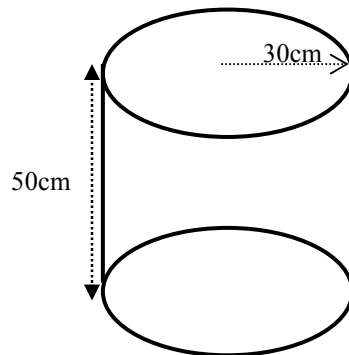
2

The distance from Glasgow to London is 670km

(b) Calculate the average speed of the bus for the journey giving your answer correct to 1 decimal place.

4

2. A display case in a museum is in the shape of a cylinder without a base.



Calculate the area of glass required to make the display case.

5

3. Sian works a basic 35 hour week and gets paid £323.40.

(a) Calculate her hourly rate of pay.

1

Any overtime she does gets paid at time and a half.

One week Sian's gross pay was £406.56.

(b) How many hours overtime did she work that week?

3

4. Salina took out some life insurance. The insurance company quoted her a monthly premium of £1.10 per thousand pounds insured.

(a) Calculate the monthly premium if Salina took a policy for £20 500.

2

Her husband also took some insurance but as he was a smoker the premium was £1.24 a month per thousand pounds insured.

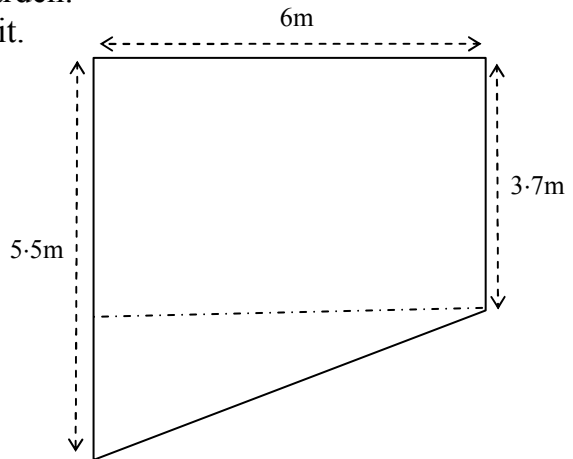
(b) Calculate how much extra her husband would have to pay in a year if his policy was for the same amount as Salina.

3

5. I have just built a new patio area in my garden.  
The diagram shows the measurements of it.

I am going to put a low fence round its perimeter.

Calculate the length of fencing that I will require.



4

6. Last year I bought a new car which cost £8400. During the first year it lost  
I sold the car last week for £4595.

Express my loss as a percentage of what I paid for the car.

4

7. The capacities (in 1000s) of some of the premier league football stadiums in Scotland are

12      18      18      22      50      61      15      14      18

(a) Calculate the mean capacity.

3

(b) Find the median.

2

(c) How does the median compare to the mean?

1

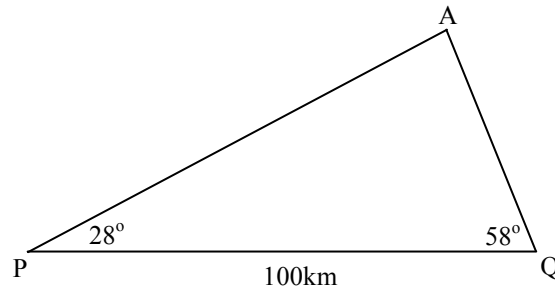
8. A ticket for coach trip from Dundee to Paris costs £56.  
Marteen wants to pay using Euros.(€)

Given that the exchange rate is £1 = €1.25, find the cost of the ticket in Euros.

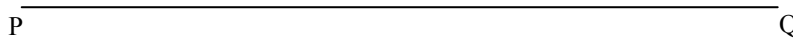
2

9. An aircraft, A, is picked up by two radar stations P and Q.  
The distance between P and Q is 100km.

The angles are as shown in the diagram below.



- (a) Make an accurate scale drawing of the diagram using the line PQ below as your starting point.



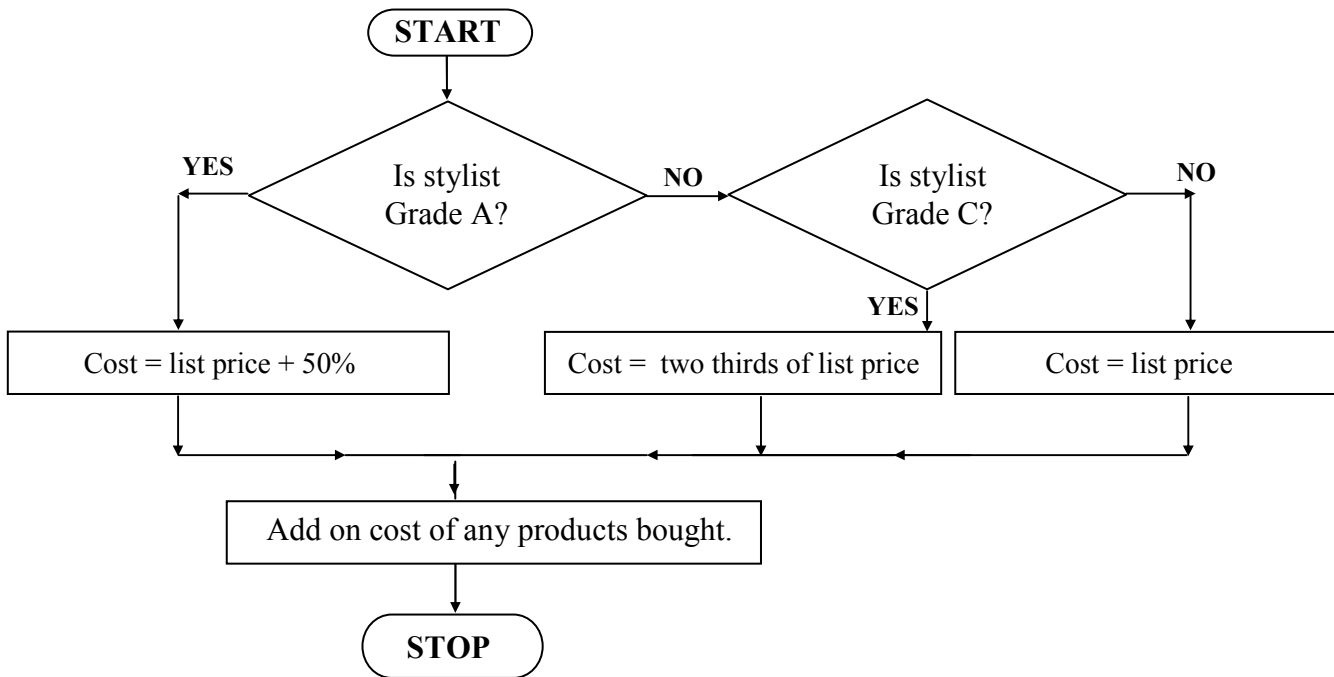
- (b) Use your drawing to find the distance from the aircraft to radar station P.

2

3

10. Perfect Endings Hairdressing has 3 grades (A, B and C) of stylist.

They use this flowchart to work out the cost of the different services available in the salon.



Use the flowchart to calculate the cost of the following

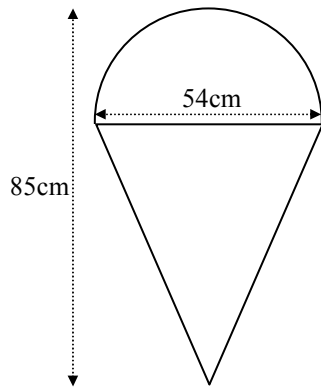
(a) A cut and finish, list price £45, with a C grade stylist and products costing £8.

2

(b) A cut and finish with an A grade stylist when no products are bought.

2

11. The sign outside the Yummy Ice Cream shop is formed from a triangle and a semi-circle.



The diameter of the semicircle is 54cm and the overall height of the sign is 85cm.

Calculate the area of the sign.

5

***END OF QUESTION PAPER***