

**MATHEMATICS ENTRANCE
EXAMINATION 2011
PRACTICE PAPER B**

DURATION: 1 HOUR



1 a) Calculate the difference between **1202** and **808**
.....
.....
.....(1)

b) Calculate the sum of **10.9** and **3.27**
.....
.....
.....(1)

c) Multiply **157** by **49**
.....
.....
.....
.....
.....
.....(3)

d) Divide **256** by **8**
.....
.....
.....(2)

2 a) Calculate the value of **$17 + 3 \times 2$**
.....
.....(1)

b) Use the fact that **$23 \times 16 = 368$** to work out;

i) **23×0.16** (1)

ii) **230×16** (1)

iii) **$368 \div 23$** (1)

iv) **$368 \div 8$** (1)

3 Look at the following list of numbers.

2 6 11 17 24 33 44 57

Write down the numbers which are;

a) **Prime**

b) **A factor of 48**

c) **A multiple of 8**

4 Look at the following list of numbers.

$\frac{4}{20}$ 0.05 0.4 $\frac{1}{20}$ $\frac{8}{30}$

Write down the two numbers which are equal to each other.

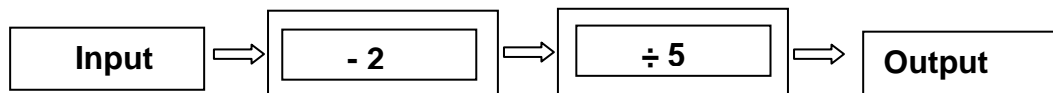
.....(1)

5 Calculate.

a) $\frac{1}{6} \times 42$

a) $\frac{5}{6} \times 42$

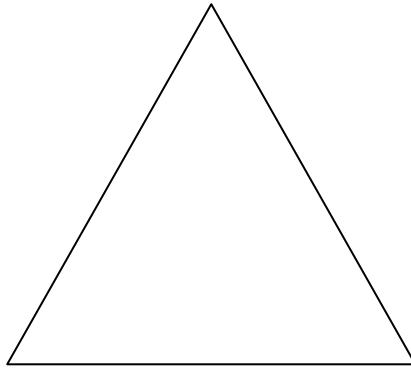
6 Look at the number machine below.



b) What would the output be for an input of **32**?
.....(1)

a) What input would lead to an output of **4**?
.....(1)

7 All the side lengths are equal in this triangle.



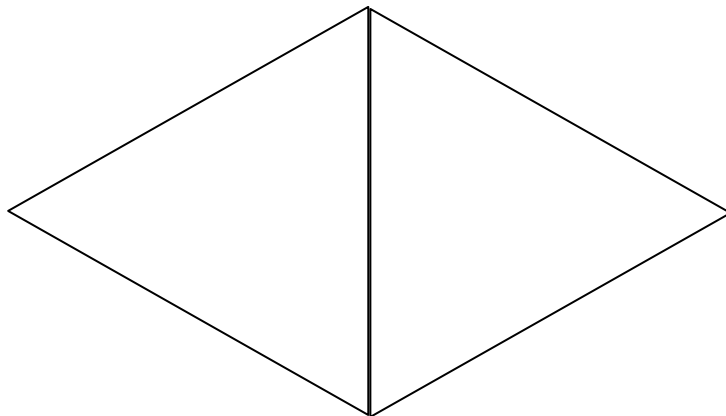
a) Name the triangle

.....(1)

b) How many lines of symmetry does the triangle have?

.....(1)

An identical pair of such triangles can be placed together to form a quadrilateral.



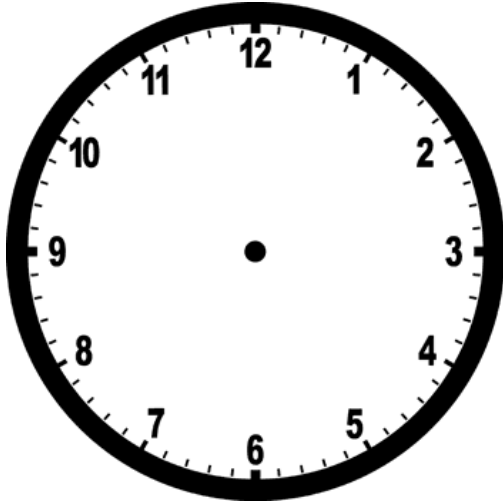
c) Name the quadrilateral

.....(1)

d) If the perimeter of the triangle is **18cm** what is the perimeter of the quadrilateral?

.....
.....cm.(2)

- 8 A bus leaves Liberation Station at 5.20 pm. It arrives 28 minutes later at the airport. Draw the hour and minute hands on this clock to indicate a time of arrival of the bus. **(2)**



What is the name of the smaller type angle formed by the hour and minute hands?

.....**(1)**

- 9 A fair six sided die is thrown. (please give your answers as simplified fractions)

a) What is the probability that the outcome will be a six?

.....**(1)**

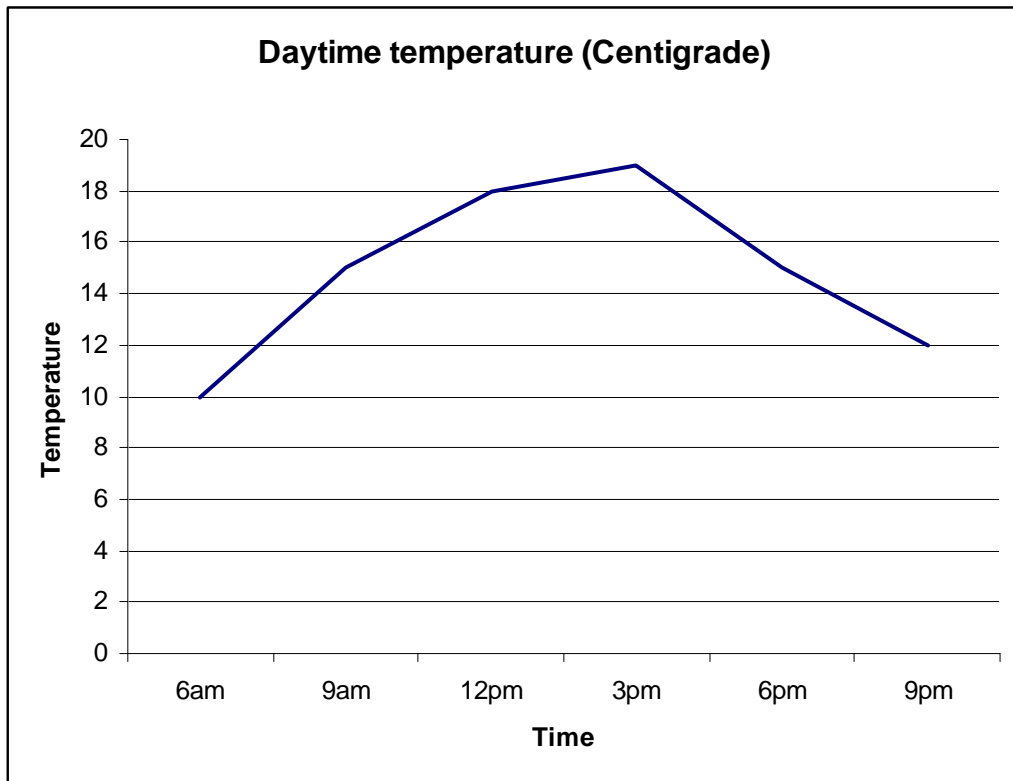
b) What is the probability that the outcome will be an even number?

.....**(1)**

c) What is more likely, that the outcome will be a prime number or an odd number?

.....**(2)**

- 10 The following graph shows the how the temperature changed in during a winter day. Temperature readings were taken every 3 hours.



- a) At what time did the minimum temperature occur?
.....(1)
- b) What was the temperature rise between **9am** and **3pm**?
.....°C.(1)
- c) What was the difference between the maximum and minimum temperatures?
.....°C.(1)

11 Here is a set of numbers.

2, 5, 10, 13, 20,

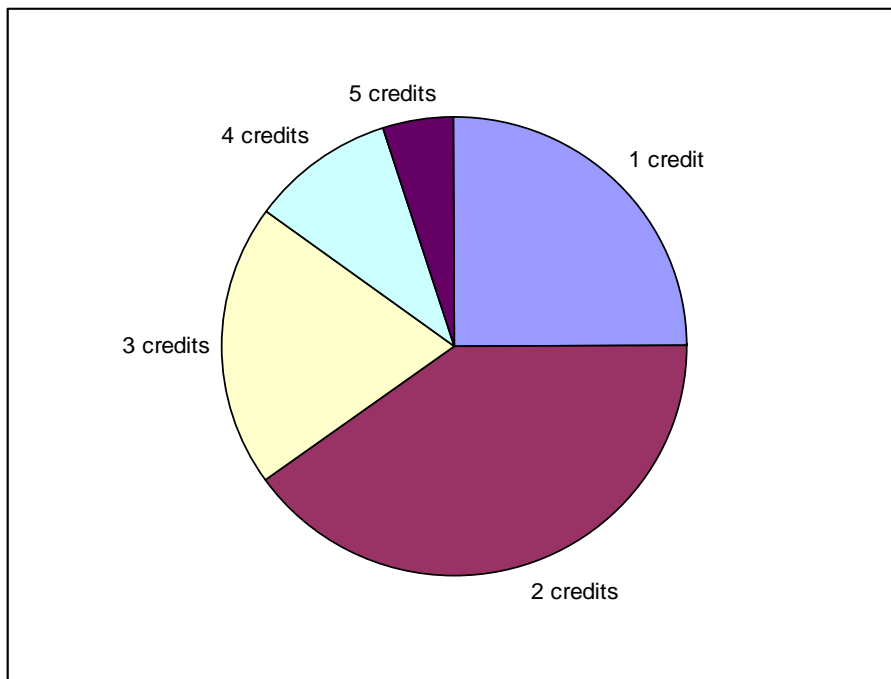
a) Work out the mean of these numbers

.....
.....(2)

Write down a set of **5** numbers where the mean of the numbers is **8**
and the highest number is **22**?

.....
.....(2)

12 The following pie chart shows the number of credits gained by students
in a class of 20 students.



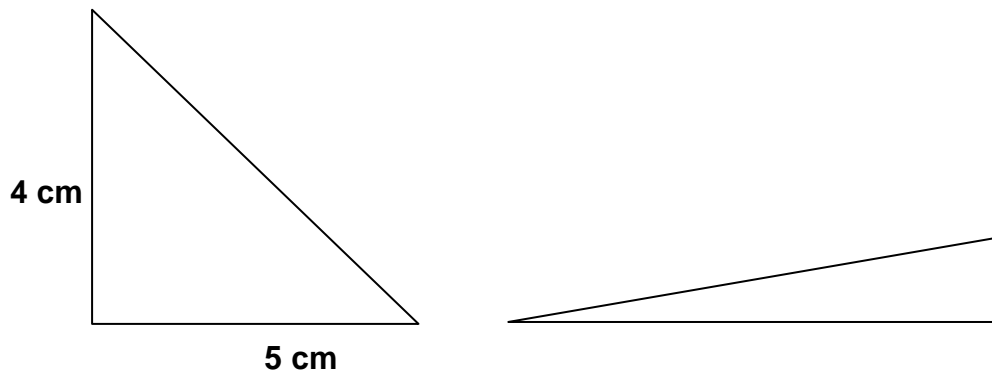
a) How many students received just 1 credit?

.....(1)

b) Calculate the total angle of all the sectors apart from the
1 credit sector.

.....
.....(2)

13 The left hand triangle is twice the area of the right hand triangle



(The triangles are **not** drawn to scale)

Work out the area of the second triangle.

.....
.....
.....**cm².(3)**

14 Calculate $7 - 4$

..... **(1)**

15 34 litres of orange juice are served at a parents' evening. The juice is served in 5 litre jugs.

a) How many jugs will be needed?

..... **(1)**

b) What volume of juice will be in the part-filled jug?

.....**litres (1)**

Solutions

- 1 a) 394 b) 14.17 c) $157 \times 9 = 1413$, $157 \times 40 = 6280$, 7693
d) 32
- 2 a) 23 b) i) 3.68, ii) 3680, iii) 16, iv) 46
- 3 a) 2, 11, 17 b) 2, 6, 24 c) 24
- 4 a) 0.05 and $\frac{1}{20}$
- 5 a) 7 b) 35
- 6 a) 6 b) 22
- 7 a) Equilateral Triangle b) 3 c) Rhombus or Parallelogram
d) $\frac{18}{3} \times 4 = 24$ cm
- 8 Hour hand at 29 min, Minute hand at 48 min
Obtuse angle
- 9 a) $\frac{1}{6}$ b) $\frac{1}{2}$ c) Neither both have same probability
of $\frac{1}{2}$
- 10 a) 6am b) 4°C c) 9°C
- 11 a) $\frac{50}{5} = 10$ b) $8 \times 5 = 40$ so 4 numbers with sum of 18 and then
number 22
- 12 a) $\frac{20}{4} = 5$ b) $360 - 90 = 270^\circ$
- 13 Left hand triangle area = 10 cm^2 , Right hand triangle area = 5 cm^2
- 14 11
- 15 a) 7 b) 4 litres
- 16 a) 10, 28 b) 5 c) change 20 to 19