

**MATHEMATICS ENTRANCE  
EXAMINATION 2016  
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)  **$23 \times 0.16$**  .....(1)
- ii)  **$230 \times 16$**  .....(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** .....(1)  
b) **A factor of 48** .....(1)  
c) **A multiple of 8** .....(1)

- 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.

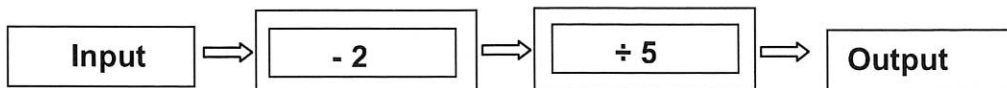
.....(1)

- 5 Calculate.

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

a)  $\frac{5}{6} \times 42$  .....(1)

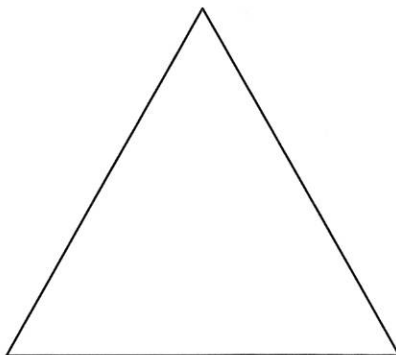
- 6 Look at the number machine below.



- 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.



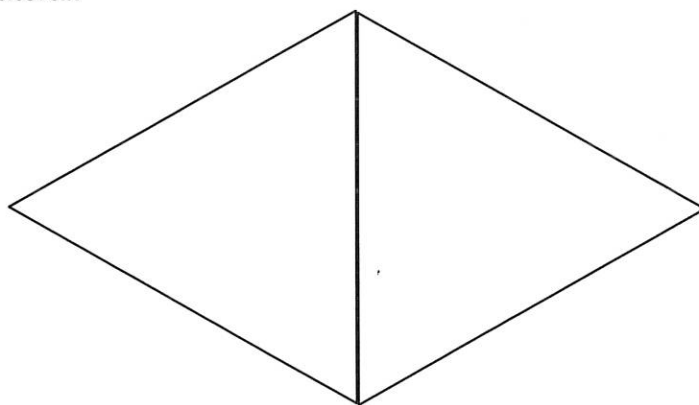
- a) Name the triangle

.....(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.



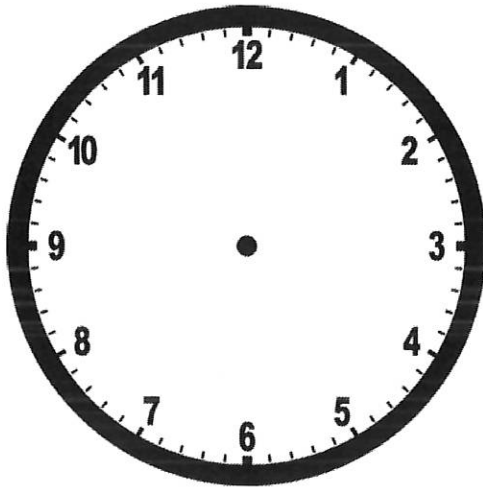
- c) Name the quadrilateral

.....(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)

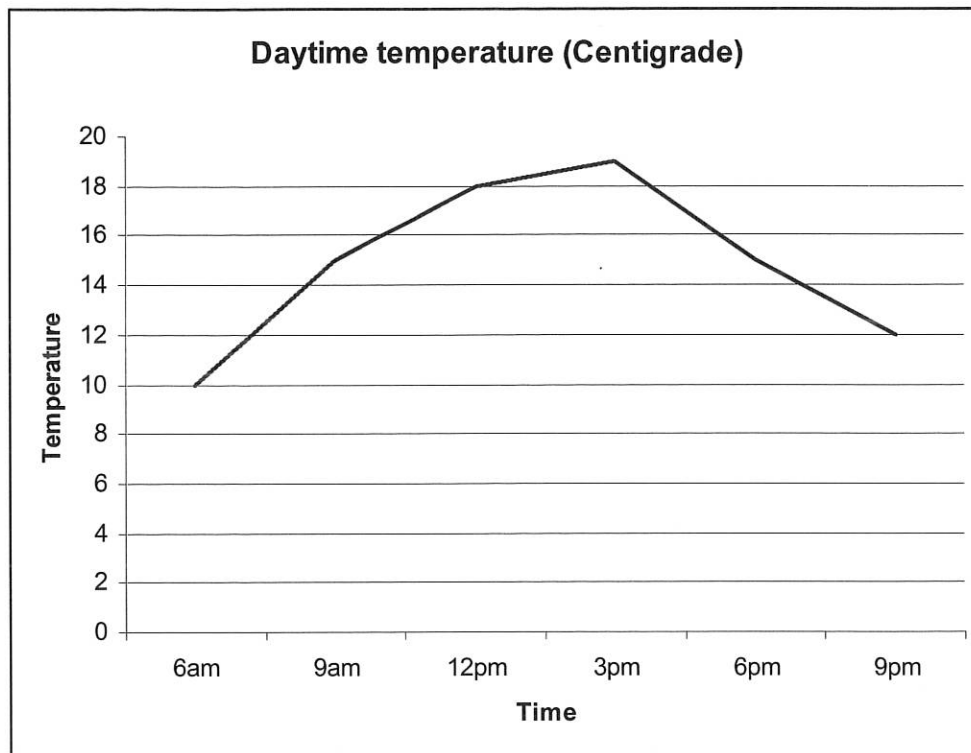
b) What is the probability that the outcome will be an even number?

.....(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,**

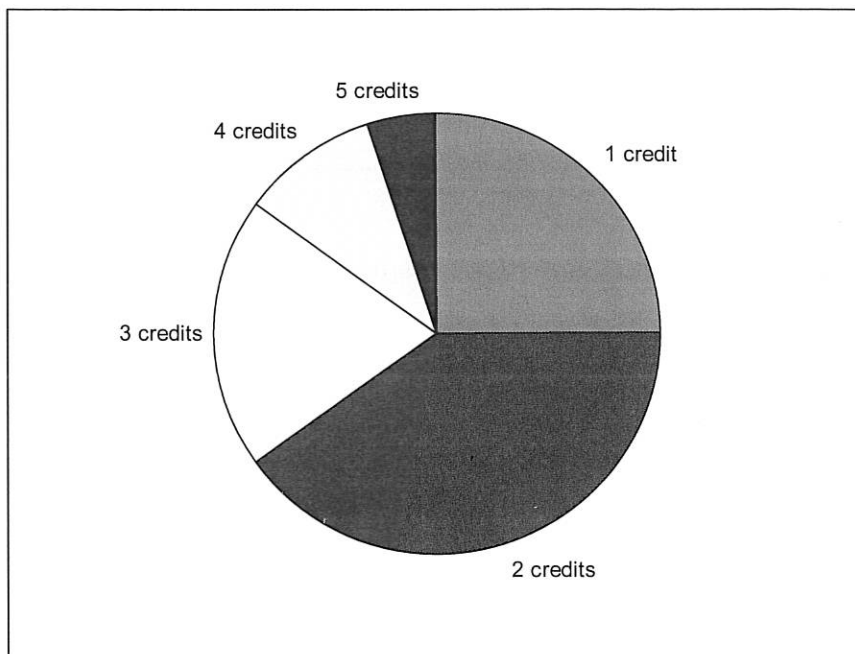
a) Work out the mean of these numbers

.....  
.....(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.



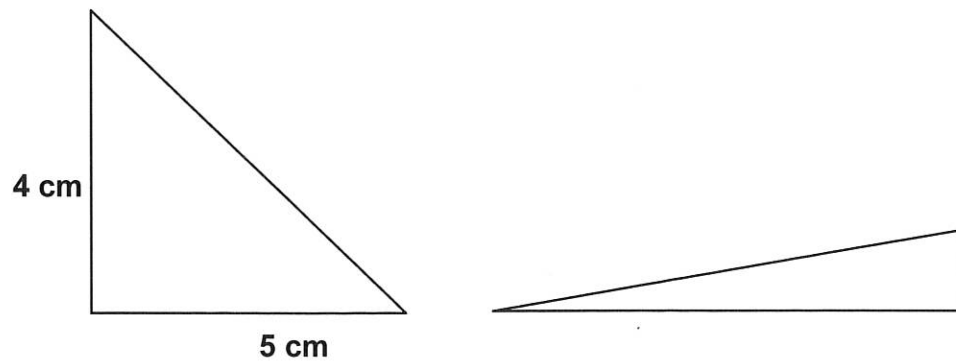
a) How many students received just 1 credit?

.....(1)

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

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

- 13      These 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.

.....  
.....  
..... $\text{cm}^2$ .(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)



- 16 In all of the following sequences of numbers the next number is generated by taking the last number, multiplying by 3 then subtracting 2.

a) Calculate the next 2 numbers in the sequence below.

2    4    .....    .....    (1)

b) Calculate the first number in the sequence below.

.....    13    37    (2)

c) One of the numbers in this sequence is incorrect.  
Change it to the correct value.

3    7    20    55    (2)

## 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)  $4^{\circ}\text{C}$  c)  $9^{\circ}\text{C}$
- 11 a)  $50/5 = 10$  b)  $8 \times 5 = 40$  so 4 numbers with sum of 18 and then  
number 22
- 12 a)  $20/4=5$  b)  $360-90 = 270^{\circ}$
- 13 Right hand triangle area =  $10\text{ cm}^2$ , Left hand triangle area =  $5\text{ cm}^2$
- 14 11
- 15 a) 7 b) 4 litres
- 16 a) 10, 28 b) 5 c) change 20 to 19