MATHEMATICS ENTRANCE
EXAMINATION 2016
PRACTICE PAPER A

DURATION: 1 HOUR

AMAT VICTORIA CURAM

1   a)   Calculate the sum of **12.51** and **9.7**

....

....

....**(1)**

   b)   Calculate the difference between **1265** and **789**

....

....

....**(1)**

   c)   Multiply **258** by **57**

....

....

....

....

....

....**(3)**

   d)   Divide **342** by **9**

....

....

....**(2)**

2   a)   Calculate the value of **25 + 5 x 3**

....

....**(1)**

   b)   Use the fact that **24 x 12 = 288** to work out;

      i)   **2.4 x 12**   ....**(1)**
      ii)   **120 x 24**   ....**(1)**
      iii) **288 ÷ 12**   ....**(1)**
      iv)   **144 ÷ 24**   ....**(1)**

3   Look at the following list of numbers.

2   3   5   8   9   11   12   16   19   21

Write down the numbers which are;

a)   **Prime**   ....(1)

b)   **Square**   ....(1)

c)   **What percentage of the numbers are multiples of 3?**

              ....(1)

4   Look at the following list of numbers.

$$\frac{12}{30} \qquad 0.3 \qquad 0.4 \qquad \frac{2}{10} \qquad \frac{12}{15}$$

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

....(1)

5   The ferry Journey from Jersey to St Malo takes 1h 15 minutes to complete. The total distance is 40 miles. What distance would someone taking this ferry have covered in;

a)   **One quarter of an hour?**

          ....miles (1)

b)   **45 minutes?**

          .... miles (1)

6   Look at the number machine below.

Input	⇨	x 9	⇨	- 7	⇨	Output
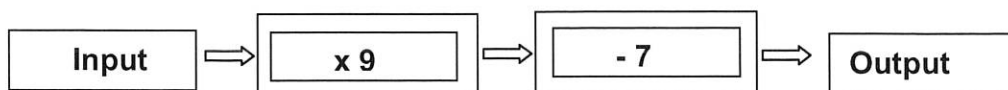
b)   What would the output be for an input of **2**?

          ....(1)

a)   What input would lead to an output of **83**?

....**(1)**

7   These two isosceles triangles can be used to make a quadrilateral.

and
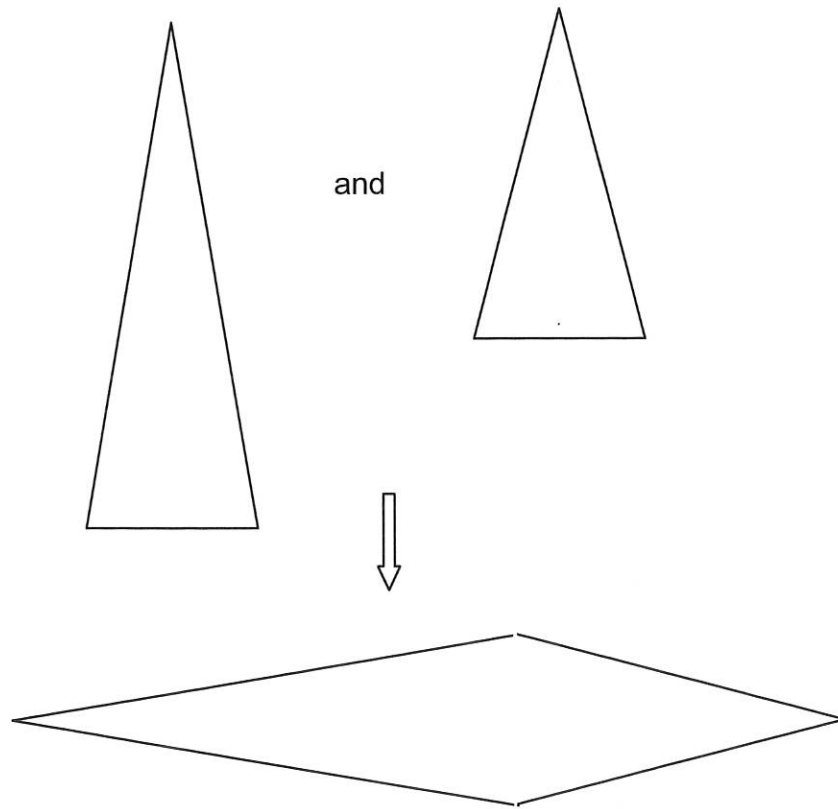
a)   Name the quadrilateral

....**(1)**

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

....**(1)**

c)   The area of the smaller triangle is 6cm^2. The larger triangle is 1.5 the area of the smaller triangle.
Calculate the area of the quadrilateral.

....

....

....cm^2..**(2)**

8   Here is part of the net of a cube. When complete the cube forms a die
     where the opposite faces add up to 7. Complete the net and the
     numbers.

1	5		
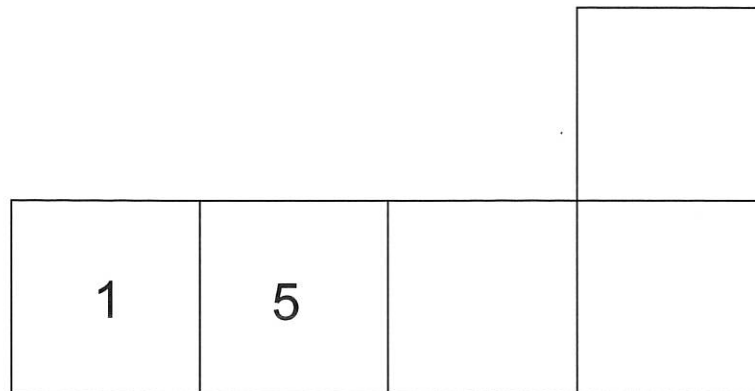
(2)

9   Draw the hour and minute hands on this clock to indicate a time of
     15:00 hours.
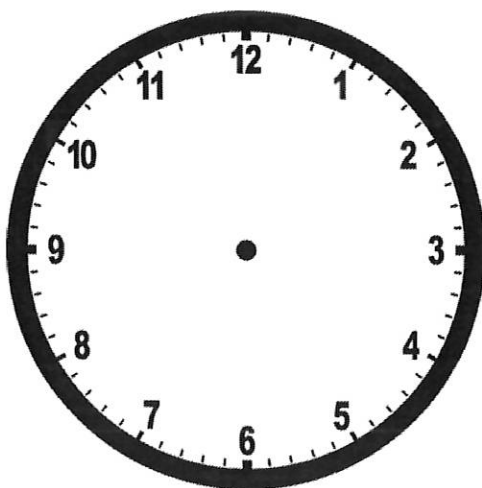
What is the name of the angle formed by the hour and minute hands?

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

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

Daytime temperature (Centigrade)
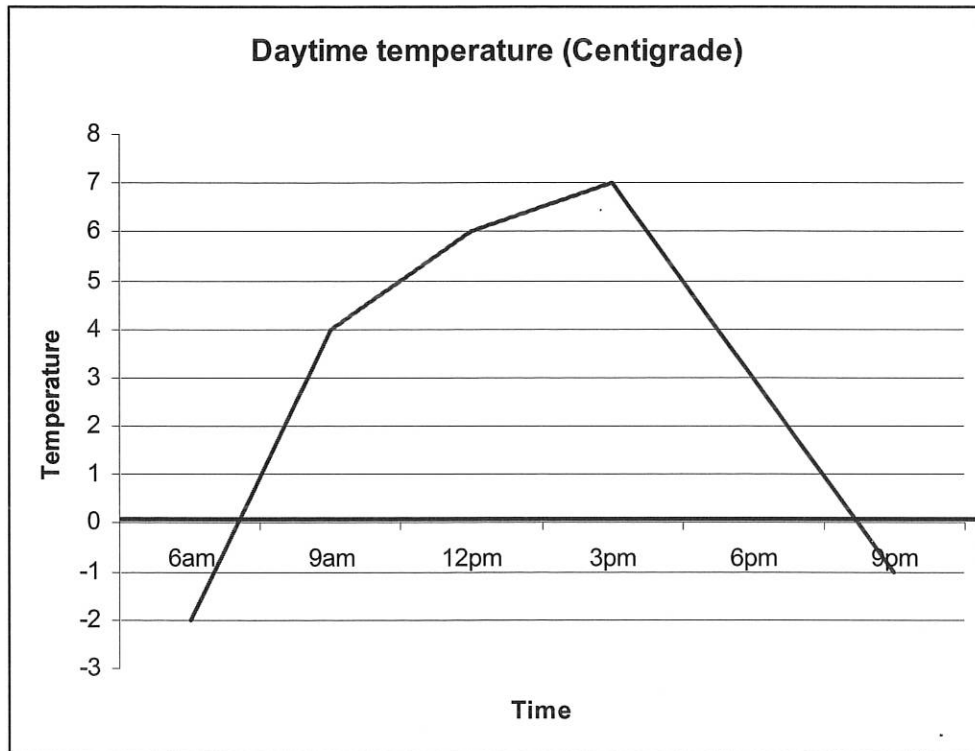
a)   At what time did the maximum temperature occur?

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

b)   What was the temperature rise between **9am** and **3pm**?

.....................................°C..(1)

c)   What was the difference between the maximum and minimum temperatures?

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

11 Here is a set of numbers.

2, 4, 7, 5, 5, 7, 14, 4, 6

a) Work out the mean of these numbers

……………………………………………………………………………………

………………………………………………………………………………….(3)

b) One number is removed from the set.

The new mean is now **5**.

Which number was removed?

……………………………………………………………………………

……………………………………………………………………….(2)

12 The following pie chart shows the favourite international foods of a class of children.
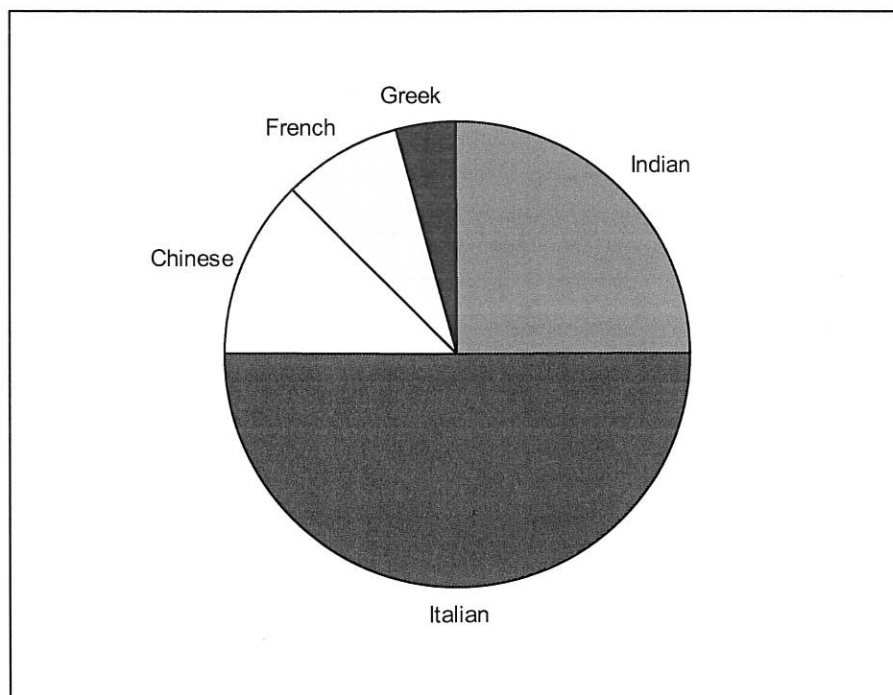
a) **6** children said they preferred Indian food. How many children were surveyed in total?

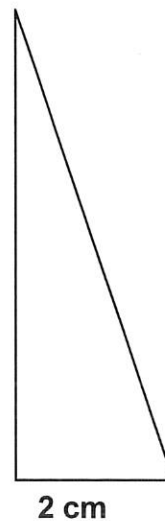………………………………..….(1)

b) **2** Children responded that French was their favourite international food. Calculate the size of the angle be for the Indian food sector.

……………………………………………………………………………….

……………………………………………………………………….(2)

13   These two triangles have the same area.

4 cm

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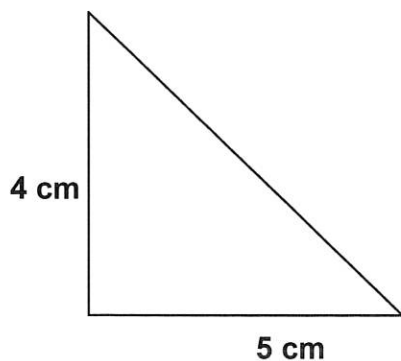
(The triangles are **not** drawn to scale)

2 cm

Work out the height of the second triangle.

………………………………………………………

………………………………………………………

……………………………………………cm²..(2)

14   Calculate **-7 - 4**

……………………………… (1)

15   There are **25** students in a class. A rugby sevens team requires **7** students.

        a)   How many complete teams can be formed from the class? (Each student cannot be chosen more than once)

……………………………… (1)

        b)   How many students would be left out of a team?

……………………………… (1)

16 In the recent rugby world cup, the pool stage involved 4 pools each made up of 5 teams. Each team plays the other teams in the group once.

Pool A
Argentina
England
Georgia
Romania
Scotland

a) How many games are played by Argentina?

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

b) How many games are played altogether by teams in the pool?

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

In the knockout stages of the tournament the top 2 teams from each pool are selected to play in one of four quarter final games. The winners of the quarter final then play a semi final, with the winners going on to play a final and the losers a third place playoff.

c) How many games are played in the knockout stages altogether?

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

d) How many games are played in the entire tournament?

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

e) If the tournament were to be changed to have only four pools of four teams each in the pool stage. How many games would be played in the tournament?

....
....(2)

Solutions

1   a) 22.21   b) 476   c) 258 x 7 = 1806, 258 x 50 = 12900, 14706

       d) 38

2   a) 40   b) i) 28.8, ii) 2880, iii) 24, iv) 6

3   a) 2,3,5,11,19   b) 9,16   c)   40%

4   a) 12/30 and 0.4

5   a) 8miles   b) 24miles

6   a) 11   b) 10

7   a) Kite   b) 1   c) 6 + 9 = 15 cm^2

8   3or 4

1	5	6	2

                     3 or 4

9   Draws 3 O'Clock,   Right Angle

10   a) 3pm   b) 3 degrees C c) 9 degrees C

11   a) 54/9 = 6   b) 8x 5 = 40 so 14 was removed

12   a) 6 x 4 = 24   b)   90 / 3 = 30°

13   area = 10 height = 10cm

14   - 11

15   a) 3   b) 4

16   a) 4   b) 10   c) 8   d) 48   e) 4 x 6 + 8 = 32