



Candidate number	
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**BURY**  
GRAMMAR SCHOOL  
AGE 3-18

# Previous Entrance Examination

## Mathematics Paper

Time: 1 hour

### Instructions

- Write your candidate number in the box at the top of this page.
- Write in biro/ink.
- CALCULATORS MUST NOT BE USED.
- Show all of your working out in the spaces provided – you can get marks for working out even if your final answer is wrong.
- Write your final answers on the answer lines at the end of the questions.
- You might not be able to answer every question. Try to complete as many as you can.
- There is extra space for working out at the back of the paper. You can use this space if you run out of space near the question.

1. Fill in the blanks:

a)  $17 \times 4 = \dots\dots\dots$

b)  $48 \div 12 = \dots\dots\dots$

c)  $84 + \dots\dots\dots = 151$

d)  $56 \div \dots\dots\dots = 7$

e)  $143 - \dots\dots\dots = 76$

(Total for Question 1 is **5 marks**)

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2. Solve these calculations:

a) 
$$\begin{array}{r} 6584 \\ + 2891 \\ \hline \end{array}$$

Answer ..... (2 marks)

b) 
$$\begin{array}{r} 362 \\ 271 \\ + 459 \\ \hline \end{array}$$

Answer ..... (2 marks)

c) 
$$\begin{array}{r} 7373 \\ - 6628 \\ \hline \end{array}$$

Answer ..... (2 marks)

(Total for Question 2 is **6 marks**)

3. Multiply:

a) 
$$\begin{array}{r} 564 \\ \times 3 \\ \hline \end{array}$$

Answer .....

(2 marks)

b) 
$$\begin{array}{r} 142 \\ \times 23 \\ \hline \end{array}$$

Answer .....

(2 marks)

(Total for Question 3 is **4 marks**)

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4. Divide:

$$1974 \div 7$$

Answer .....

(Total for Question 4 is **2 marks**)

5. Calculate:

a)  $-8 + 12$

Answer .....

(1 mark)

b)  $7 - 13$

Answer .....

(1 mark)

c)  $-3 \times -5$

Answer .....

(1 mark)

d)  $6 \times -8$

Answer .....

(1 mark)

e)  $-38 \div -2$

Answer .....

(1 mark)

f)  $-3 - -9 + -12$

Answer .....

(1 mark)

(Total for Question 5 is **6 marks**)

**6.** Write down the values of each item:

a)  $6^2$

Answer .....

(1 mark)

b)  $12^2$

Answer .....

(1 mark)

c)  $\sqrt{49}$

Answer .....

(1 mark)

d)  $\sqrt{121}$

Answer .....

(1 mark)

(Total for Question 6 is **4 marks**)

7. Write these fractions as decimals:

a)  $\frac{1}{2}$

Answer .....

(1 mark)

b)  $\frac{4}{5}$

Answer .....

(1 mark)

c)  $\frac{3}{10}$

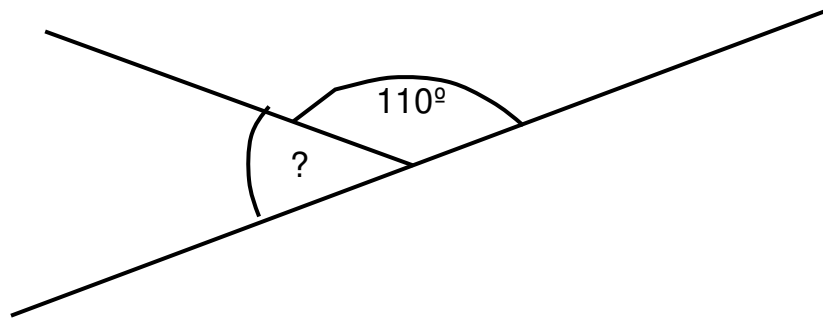
Answer .....

(1 mark)

(Total for Question 7 is **3 marks**)

8. Find the missing angles (Diagrams not drawn accurately)

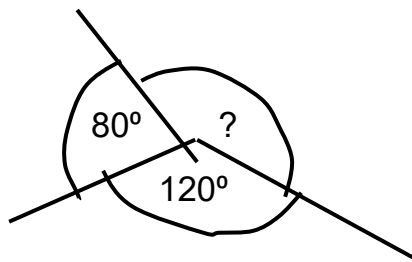
a)



Answer: ..... $^\circ$

(1 mark)

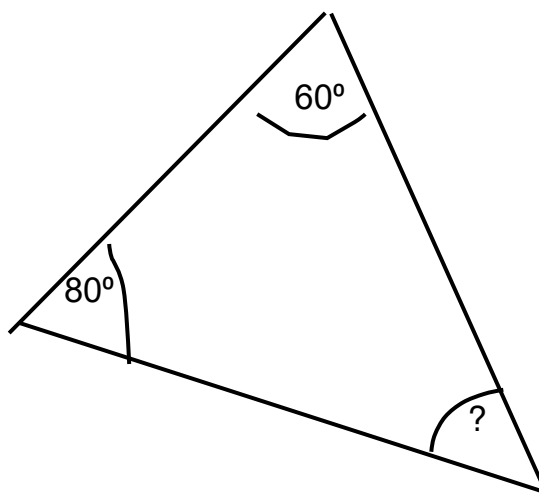
b)



Answer: ..... $^\circ$

(1 mark)

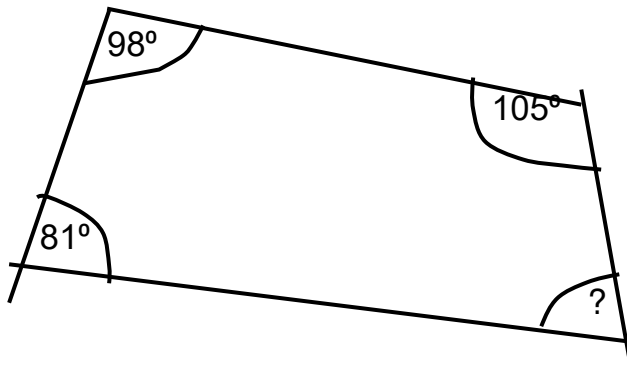
c)



Answer ..... $^\circ$

(1 mark)

d)

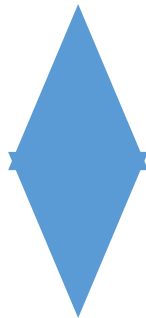


Answer .....

(2 marks)

(Total for Question 8 is 5 marks)

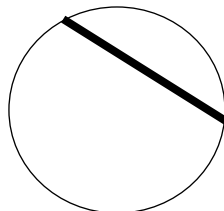
9. a) What is the name of the shape below?



Answer .....

(1 mark)

b) What is the name given to a line that goes from one side of a circle to the other but does not go through the centre?



Answer .....

(1 mark)

(Total for Question 9 is 2 marks)

10. a) Round these numbers to the nearest hundred:

481

Answer .....

(1 mark)

2336

Answer .....

(1 mark)

b) Round these numbers to the nearest whole number:

7.28

Answer .....

(1 mark)

17.83

Answer .....

(1 mark)

c) Round these numbers to one decimal place:

6.6733

Answer .....

(1 mark)

348.9841

Answer .....

(1 mark)

(Total for Question 10 is **6 marks**)

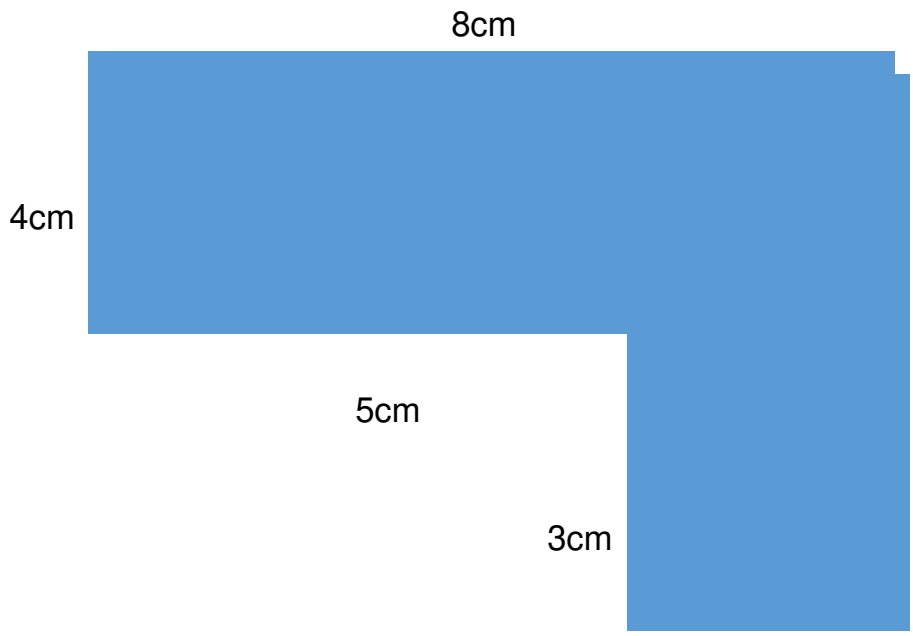
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11. Put these numbers in size order, from smallest to largest.

-0.56, 5.6, 6.5, 5.56, -5.6, -6.5, 0.655, 0.65, 0.6  
....., ....., ....., ....., ....., ....., ....., ....., .....

(Total for Question 11 is **3 marks**)

12. Calculate the perimeter and area of this shape (diagram not drawn to scale):



Perimeter .....cm Area .....cm<sup>2</sup>

(Total for Question 12 is **5 marks**)

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13. Mariah plays a game where the maximum score is 100.  
She plays five times.  
The mean score from her first four games is 62.  
What score does she need to obtain in her fifth game in order to keep obtain  
a mean score of over 65?

Answer .....

(Total for Question 13 is **3 marks**)

**14.** Calculate:

a)  $0.6 \times 180$

Answer ..... (2 marks)

b)  $0.4 \times 1.4$

Answer ..... (2 marks)

c) Work out 29% of 640

Answer ..... (2 marks)

(Total for Question 14 is **6 marks**)

**15.** There are 3 prime numbers between 15 and 25.  
What are they?

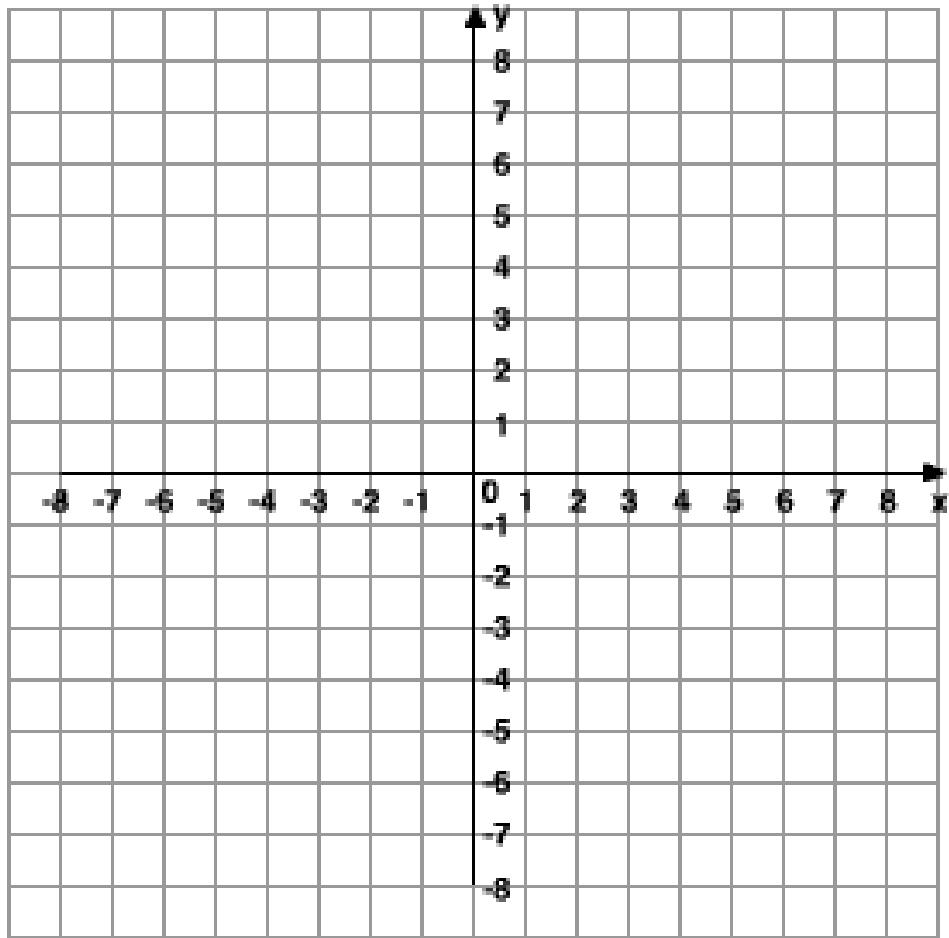
Answer ....., ..... and .....

(Total for Question 15 is **3 marks**)



16. a) Mark these coordinates on the grid below with an X for each one.

$(-6, -2)$     $(-6, 2)$     $(0, 8)$



b) Mark with a cross another coordinate which, along with the other three coordinates, makes a regular trapezium (one that is symmetrical).

(Total for Question 16 is **5 marks**)

17. a) Put these fractions in order of size, smallest to largest:

$$\frac{2}{3} , \frac{19}{21} , \frac{4}{7} , \frac{1}{2} , \frac{5}{6}$$

..... , ..... , ..... , ..... , .....

(3 marks)

Calculate:

b)  $1\frac{3}{4} - \frac{11}{12}$

Answer .....

(2 marks)

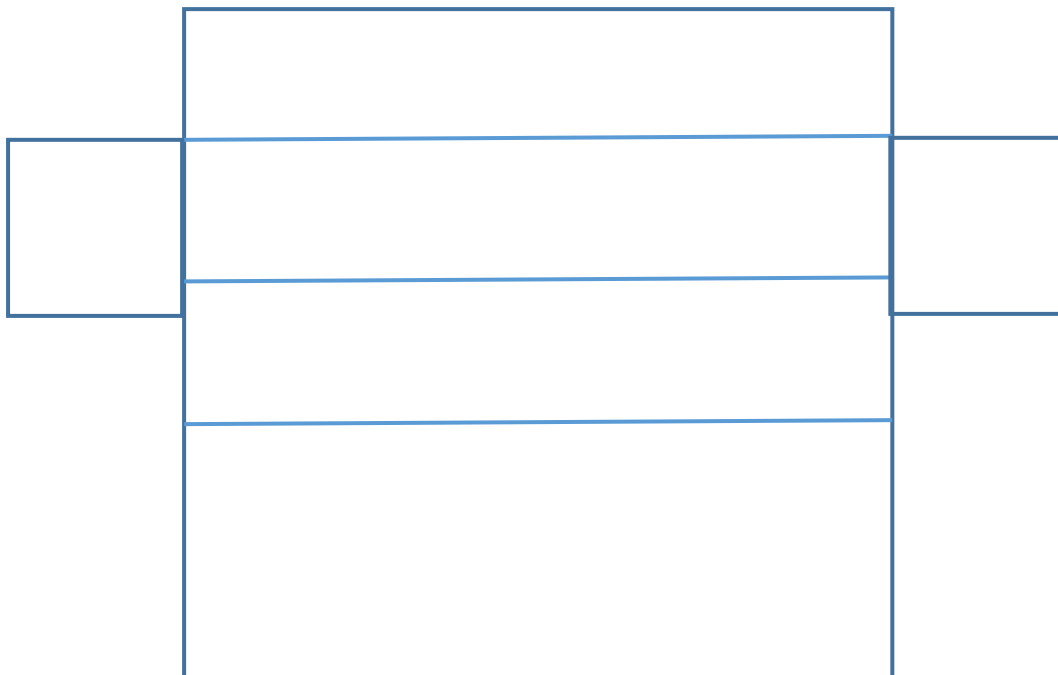
c)  $1\frac{1}{3} \div 1\frac{3}{5}$

Answer .....

(2 marks)

(Total for Question 17 is **7 marks**)

**18.** Look at this net of a 3D shape



a) What is the name of this 3D shape?

Answer .....

(1 mark)

b) How many faces does the shape have?

Answer .....

(1 mark)

c) How many vertices does the shape have?

Answer .....

(1 mark)

(Total for Question 18 is **3 marks**)

**19.** Look at this sequence

**13 , 17 , \_\_\_\_\_ , 25 , 29 , \_\_\_\_\_**

a) Fill in the blanks

We can describe the rule for the above sequence as being

'add 4 each time'

The sequence below has a rule of

‘multiply by 2 and then add 1’

b) Fill in the blanks for this sequence:

\_\_\_\_, **7**, \_\_\_\_\_, \_\_\_\_\_, **63**, \_\_\_\_\_

(Total for Question 19 is **6 marks**)

**20.** A grocer buys 80 pears from a farmer for £20.

If the grocer wants to make at least 20% profit, what is the lowest price he can sell each pear for?

Answer .....

(Total for Question 20 is **3 marks**)

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**21.** There are 20 teams in the Premier League.

In one season, each team plays every other team twice – once at home and once away.

How many matches will there be all together in one full season?

Answer .....

(Total for Question 21 is **3 marks**)

**22.** I am looking for three digit numbers that fits a special pattern.

The number 284 fits my pattern.

The middle digit, 8, is the same as the value obtained when you multiply the other two digits ( $2 \times 4$ ).

List all the other three digit numbers that also fit this pattern?

Answer .....

(Total for Question 22 is **3 marks**)

**23.** Ehsan has a watch that is 1 minute fast per hour.

Jessica has a watch that is 2 minutes slow per hour.

They see each other at midday on Monday and set their watches to the correct time.

The next time they see each other the times on their watches are exactly one hour apart.

What is the earliest possible time that this could be?

Answer .....

(Total for Question 23 is **3 marks**)

Please use this SPACE for extra working out if needed.

SHOW the number of the question that you are solving if you are using this space to work out.

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