

# Warwick School



11+ Entrance Examination 2016

## Mathematics

Please write your full name here:

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Before you start read these instructions:

- This test lasts 45 minutes
- We would like to see how you worked out your answers, so **show your working**. We may be able to give you marks even if the answer is wrong.
- Do **not** use a calculator.

1. Work out:

a)  $2347 + 184$

Answer: \_\_\_\_\_ [1]

b)  $2854 - 317$

Answer: \_\_\_\_\_ [1]

c)  $276 \times 36$

Answer: \_\_\_\_\_ [1]

d)  $3213 \div 9$

Answer: \_\_\_\_\_ [1]

2. Calculate

a)  $\frac{2}{7} + \frac{3}{7}$

Answer: \_\_\_\_\_ [1]

b)  $6 \times \frac{1}{4}$

Answer: \_\_\_\_\_ [1]

c) Given that  $\frac{1}{12} + \frac{1}{4} = \frac{1}{3}$ ,

what is  $\frac{1}{3} - \frac{1}{12}$ ?

Answer: \_\_\_\_\_ [1]

Total (7)

3. Find the next two numbers in these sequences:

a) 7, 13, 19, 25, . . . . . , . . . . .

b) 61, 53, 45, 37, . . . . . , . . . . .

c) 2.5, 10.5, 18.5, 26.5, . . . . . , . . . . .

d) 0.025, 0.027, 0.029, . . . . . , . . . . . [4]

4. 527 West Ham fans meet at Upton Park to travel to Norwich to watch a football match. There are 11 coaches to transport them each of which can take 46 fans.

a) How many fans can travel in the coaches?

Answer: \_\_\_\_\_ [2]

b) The fans that cannot fit onto the coaches are transported by taxi. Each taxi can transport 4 fans. How many taxis are needed?

Answer: \_\_\_\_\_ [2]

Total (8)

5. How many centimetres are there in 70.24 metres?

Answer: \_\_\_\_\_ cm [1]

6. Florence eats spaghetti every seven days and apple pie every three days. She eats both spaghetti and apple pie on 2<sup>nd</sup> January. When will she next eat them both on the same day?

Answer: \_\_\_\_\_ [2]

7. Last night the temperature was -8°C but today it is 13°C. By how much has the temperature gone up?

Answer: \_\_\_\_\_ °C [1]

8. Convert these to decimals:

a) 23.5%

Answer: \_\_\_\_\_ [1]

b) 7%

Answer: \_\_\_\_\_ [1]

c)  $\frac{3}{20}$

Answer: \_\_\_\_\_ [2]

9. Put these numbers in order from smallest to largest:  
0.2 , 0.122 , 0.02

Answer: \_\_\_\_\_ [1]

Total (9)

10. A recipe for 12 shortcakes requires 10 ml of milk. Liz makes some shortcakes and uses 25 ml of milk. How many shortcakes does Liz make?

Answer: \_\_\_\_\_ [2]

11. Jeff catches a train from Bath to London at 0735. The journey takes 1 hour 35 minutes to reach London. Jeff then takes 40 minutes to walk to work. At what time does he arrive at work?

Answer: \_\_\_\_\_ [3]

12. Stanley buys  $x$  packets of crisps at 25p each and  $y$  chocolate bars at 42p. Write down a formula for the total amount,  $T$  pence, that he spends.

Answer: \_\_\_\_\_ [3]

13. A particular fruit drink is made by mixing apple juice and orange juice in the ratio 4:5. How many litres of apple juice is needed to make 36 litres of the fruit drink?

Answer: \_\_\_\_\_ [3]

Total (11)

14. I think of a number, multiply it by 3 and then subtract 8 and the result is 4.  
What was the number I thought of?

Answer: \_\_\_\_\_ [2]

15. Work out  $246 \times 507$

Answer: \_\_\_\_\_ [2]

16. Work out  $3597 \div 11$

Answer: \_\_\_\_\_ [2]

17. Fill in the blanks in the following:

a)  $94 \times 73 = 73 \times \dots$

b)  $2 \times 52 = 4 \times \dots = 8 \times \dots$

c)  $16 \times 24 = 6 \times \dots \times 2$

[4]

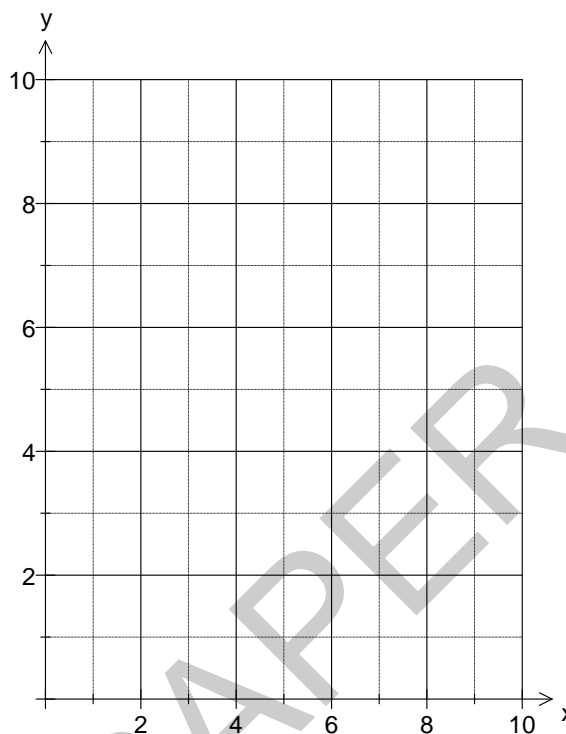
Total (10)

18. a) Plot the points (4,2), (4,6), (3,5) and (5,5) and join them up to make a shape.

[2]

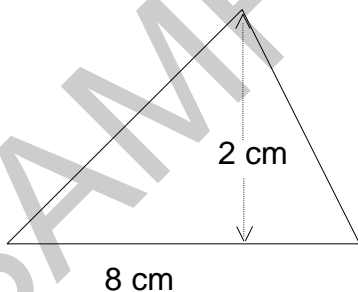
- b) What name is given to this shape?

Answer: \_\_\_\_\_ [1]



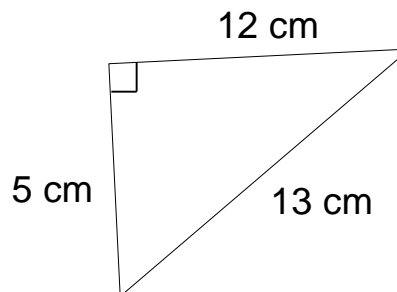
19. Work out the area of these triangles. They are not drawn to scale.

a)



Answer: \_\_\_\_\_ cm<sup>2</sup> [2]

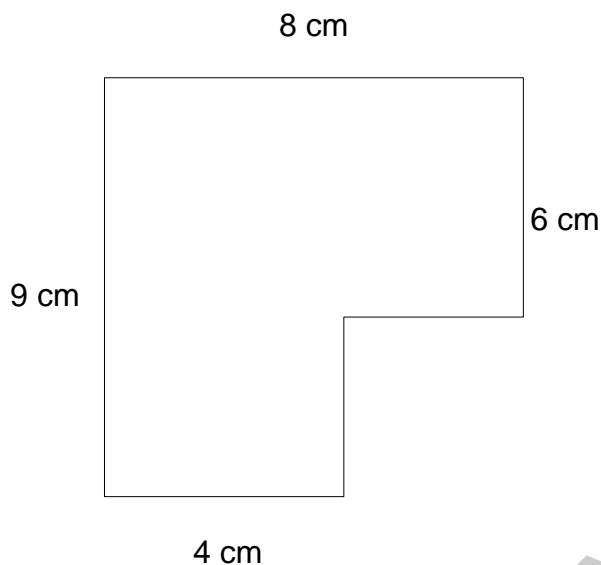
b)



Answer: \_\_\_\_\_ cm<sup>2</sup> [2]

Total (7)

20. Find the perimeter and area of this shape. It is not drawn to scale.



Perimeter = \_\_\_\_\_ cm [2]

Area = \_\_\_\_\_ cm<sup>2</sup> [2]

21. a) List the factors of 63.

Answer: \_\_\_\_\_ [3]

- b) List the multiples of 7 that are less than 30.

Answer: \_\_\_\_\_ [2]

22. Calculate 30% of £270.

Answer: \_\_\_\_\_ [2]

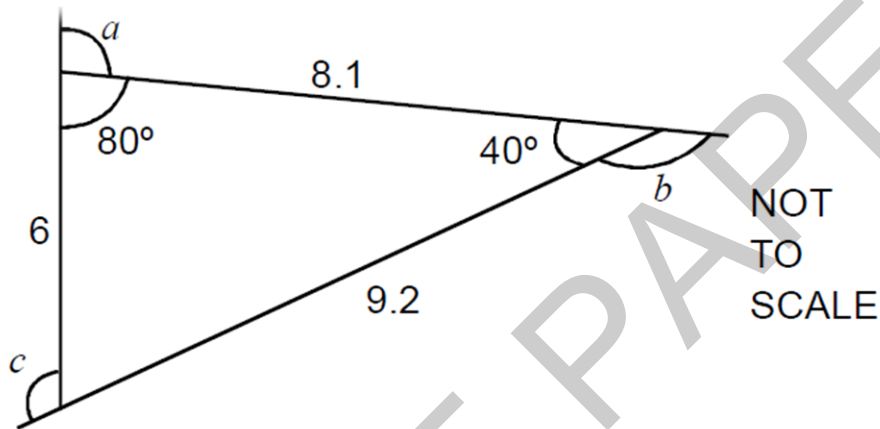
Total (11)



23. What number is half way between 3.2 and 5.6?

Answer: \_\_\_\_\_ [2]

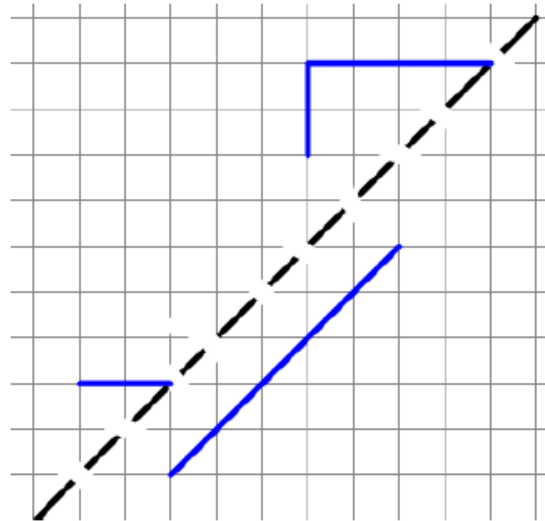
24. Find the values of  $a$ ,  $b$  and  $c$  in the diagram below.



Answer:  $a =$  \_\_\_\_\_,  $b =$  \_\_\_\_\_,  $c =$  \_\_\_\_\_ [3]

25.

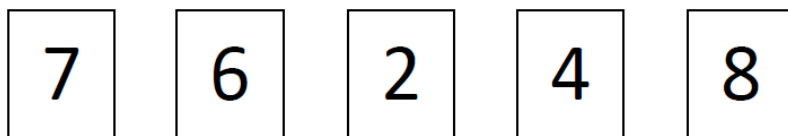
The dotted line is a line of symmetry of a shape, which is partly drawn. On the grid complete the shape.



[2]

Total (7)

26. Here are five cards with numbers printed on them.



The cards can be placed in order to form a 5-digit number.

For example the smallest number that could be made with all 5 cards is:



- a) Using all 5 cards what is the largest possible even number?

Answer: \_\_\_\_\_ [2]

- b) Using all 5 cards what is the number closest to 70,000?

Answer: \_\_\_\_\_ [2]

- c) Using only two of the cards, what is the largest multiple of 4 you can make?

Answer: \_\_\_\_\_ [2]

Total (6)

27.

Here are the number of goals scored in seven games by a football team:

4, 2, 2, 1, 3, 6

- a) What is the mean number of goals scored per game?

Answer: \_\_\_\_\_ [2]

- b) What is the mode of the goals scored per game?

Answer: \_\_\_\_\_ [1]

- c) What is the median of the goals scored per game?

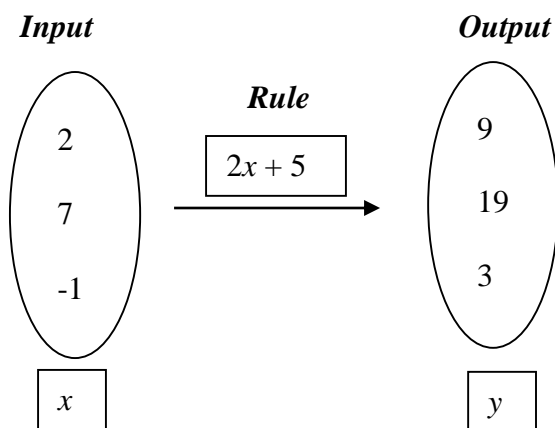
Answer: \_\_\_\_\_ [2]

- d) In the next 4 games another 3 goals are scored by the team. What is the mean number of goals per game for the ten matches?

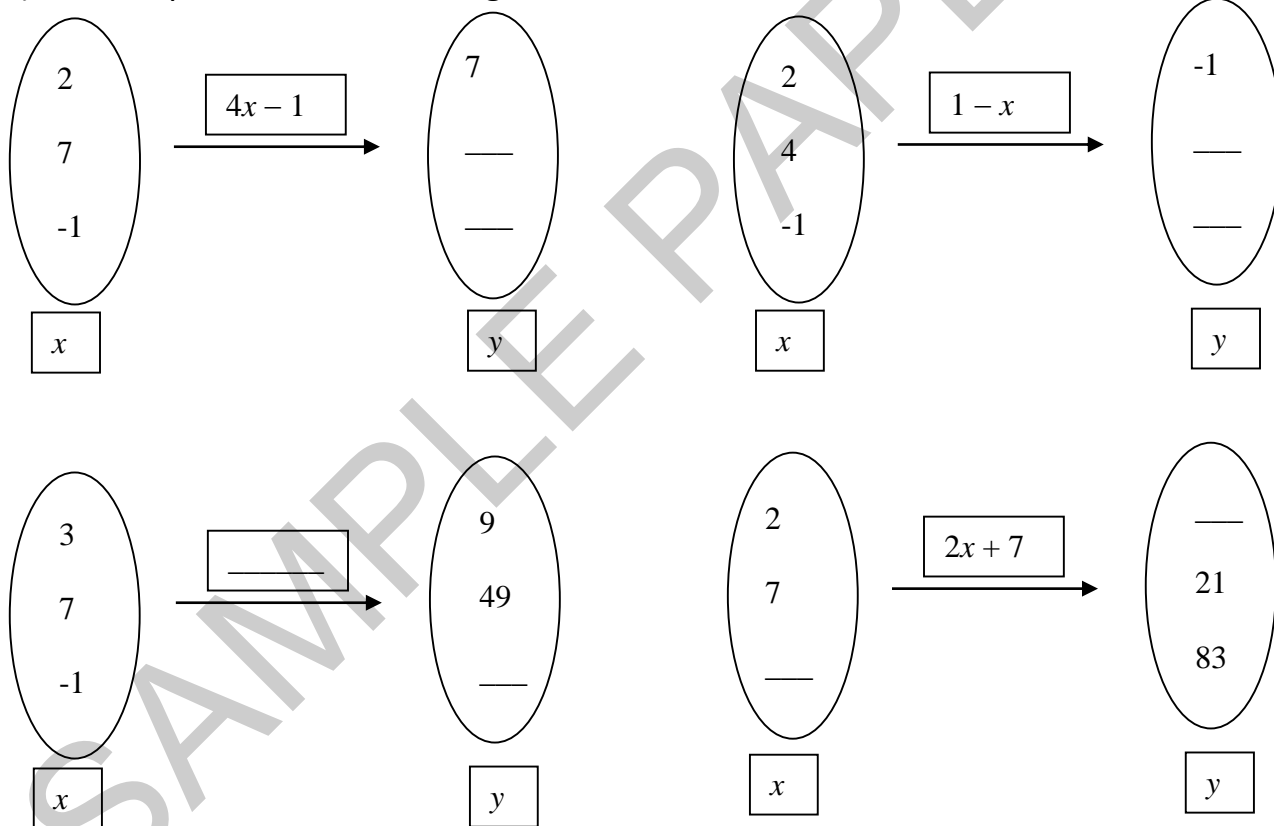
Answer: \_\_\_\_\_ [2]

Total (7)

28. This question refers to an *output*  $y$  generated from passing an *input*  $x$  through a *rule*. Here is an example:



- a) Complete these other diagrams:

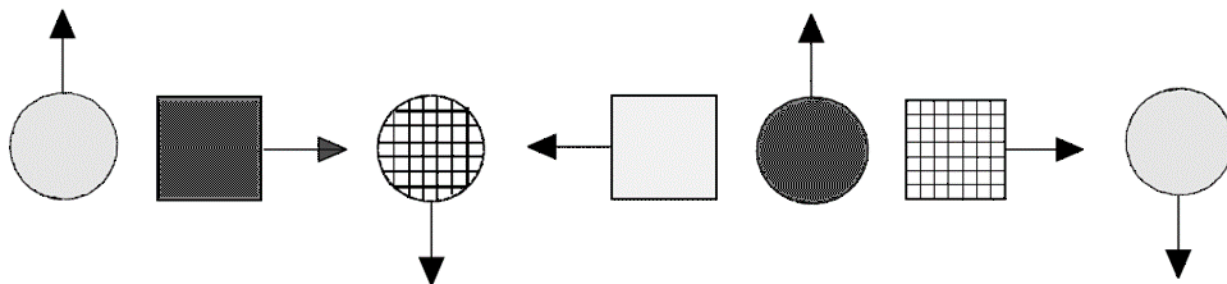


- b) i) What is the output when 2 is put into the rule  $\frac{1}{x}$  ?

ii) If you put your answer to i) into the same rule again, what do you notice?

Total [9]

29. Consider the pattern illustrated below.



Each figure has three properties, shape, direction of arrow, and shading (light, dark and grid).

- a) How does each property change?
- b) Describe (or draw) the 10<sup>th</sup> figure.
- c) What shape is the 50<sup>th</sup> figure in the pattern? The 75<sup>th</sup> figure?
- d) When will the first figure reappear?
- e) Describe (or draw) the 100<sup>th</sup> figure in the pattern

Total [8]

**END OF EXAMINATION**

**Now go back, check your answers and try any questions you may have left out.**