Warwick School



11+ Entrance Examination 2016

Mathematics

Please write your full name here:

_____

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.

SAMPLE PAPER

Remember to show your working

1. Work out:

a) 2347 + 184

Answer: _____ [1]

b) 2854 - 317

Answer: _____ [1]

c) 276 × 36

Answer: _____ [1]

d) 3213 ÷ 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)

SAMPLE PAPER

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]

SAMPLE PAPER

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 2nd 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)

SAMPLE PAPER

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)

SAMPLE PAPER

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 246×507

Answer: _____ [2]

16. Work out $3597 \div 11$

Answer: _____ [2]

17. Fill in the blanks in the following:

a) 94 × 73 = 73 × …..

b) 2 × 52 = 4 × ….. = 8 ×…..

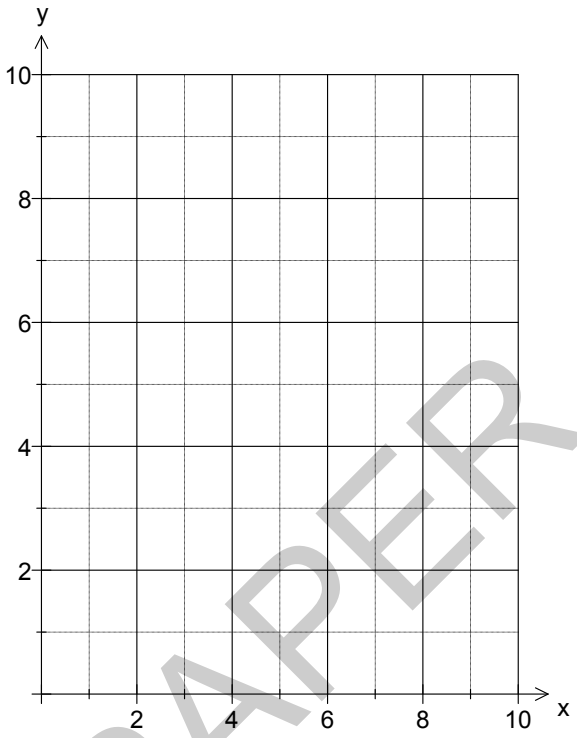
c) 16 × 24 = 6 × …….. × 2

[4]

Total (10)

SAMPLE PAPER

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



[2]

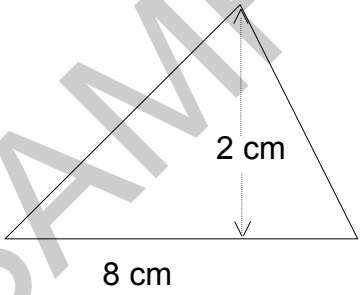
b) What name is given to this shape?

Answer: _____ [1]

SAMPLE PAPER

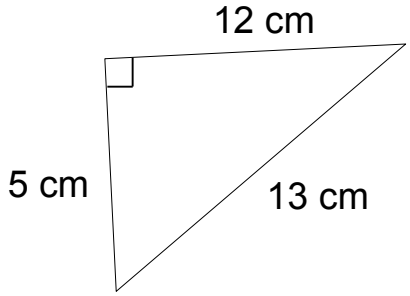
19. Work out the area of these triangles. They are not drawn to scale.

a)



Answer: _____cm^2 [2]

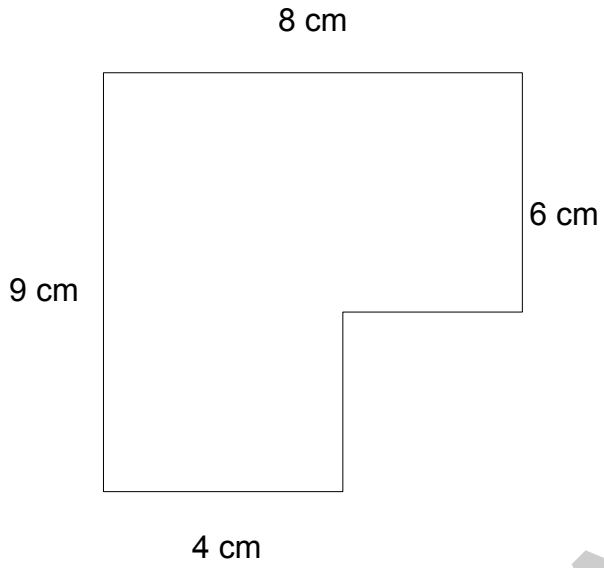
b)



Answer: _____cm^2 [2]

Total (7)

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



Perimeter = _____cm [2]

Area = _____cm^2 [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]

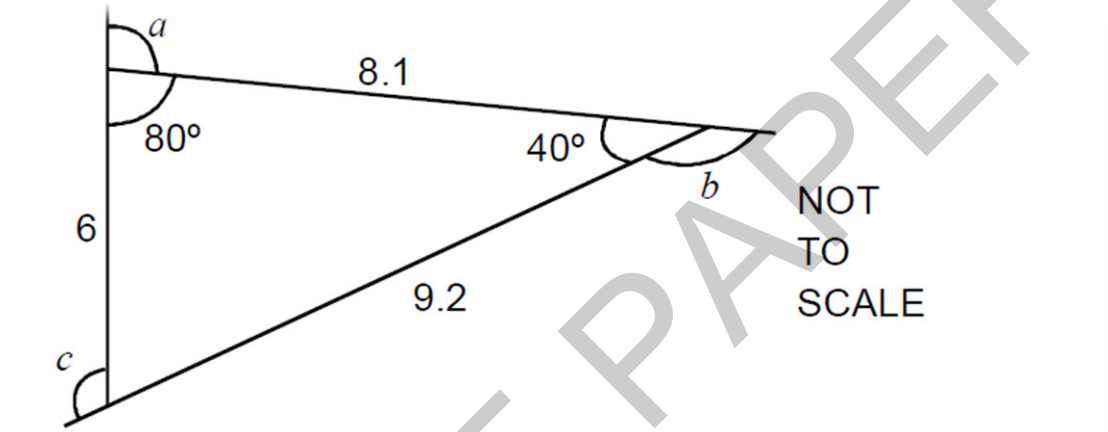
Total (11)

SAMPLE PAPER

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

Answer: _____ [2]

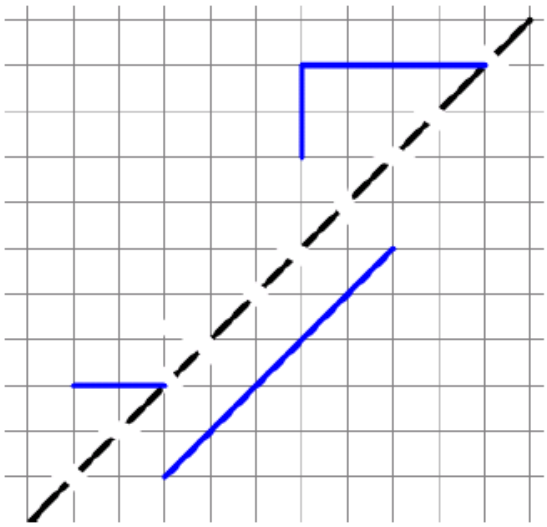
24. Find the values of *a*, *b* and *c* in the diagram below.



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)

SAMPLE PAPER

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

7	6	2	4	8

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:

2	4	6	7	8

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)

SAMPLE PAPER

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]

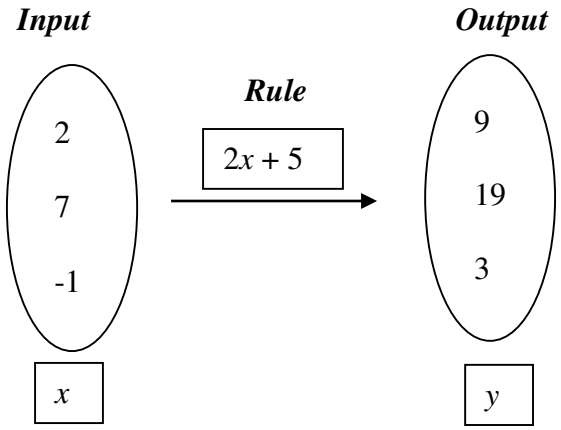
d) In the next 4 games another 3 goals are scored by the team. What is the mean number of goals per game for the ten matches?

Answer: _____ [2]

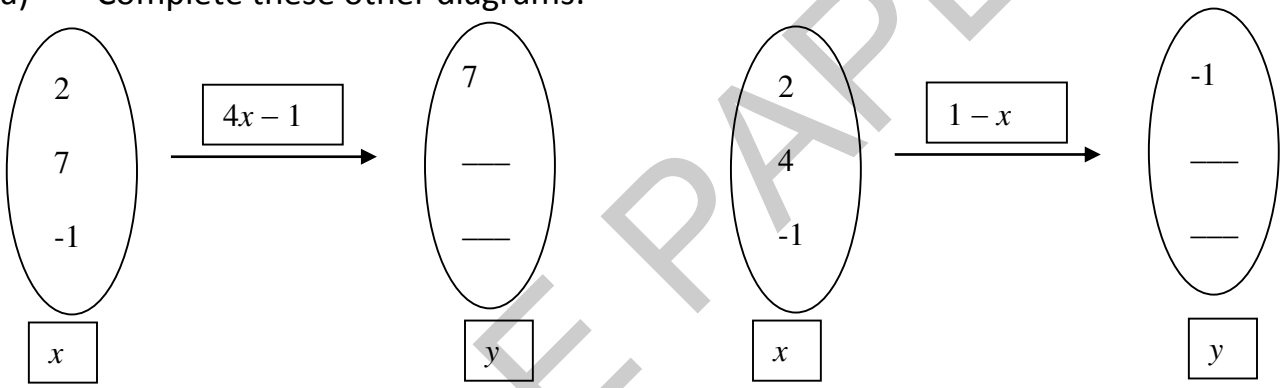
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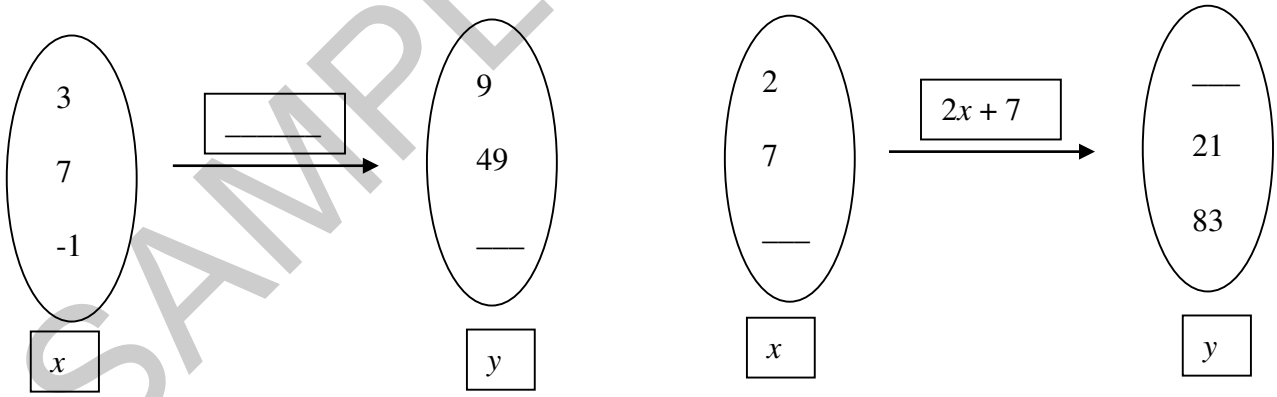
SAMPLE PAPER

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:





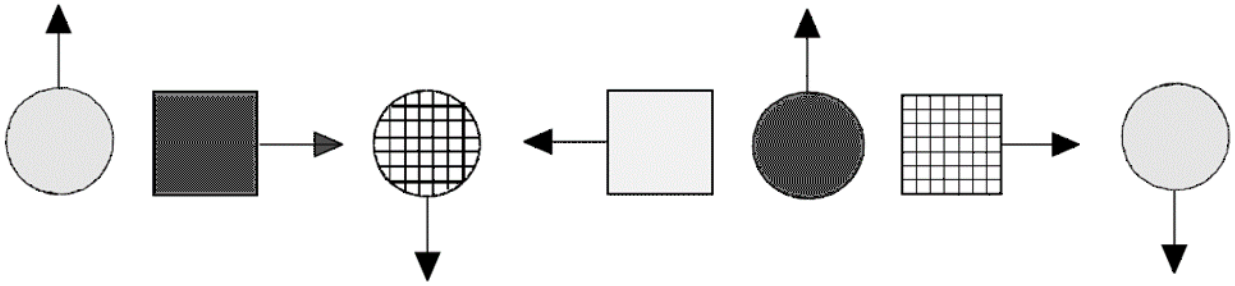
b) i) What is the output when 2 is put into the rule $\boxed{\frac{1}{x}}$?

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

Total [9]

SAMPLE PAPER

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^{th} figure.

c) What shape is the 50^{th} figure in the pattern? The 75^{th} figure?

d) When will the first figure reappear?

e) Describe (or draw) the 100^{th} figure in the pattern

Total [8]

END OF EXAMINATION

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

SAMPLE PAPER