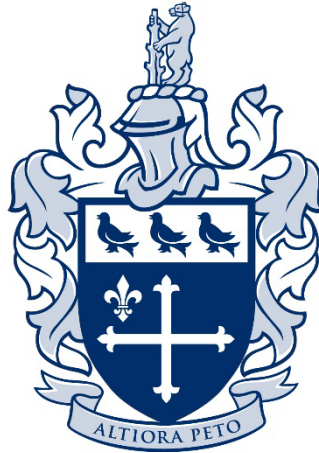# Warwick School

11+ Entrance Examination

Mathematics

Please write your full name here:

_____

Before you start read these instructions:

- ➤ The test lasts 60 minutes.
- ➤ We would like to see how you worked out your answers, so **show your working**. We may be able to give your marks even if the answer is wrong.
- ➤ If you cannot do a question, leave it and move to the next question.
- ➤ **Do not use a calculator.**
- ➤ **Have you written your full name above?**

1.   Work out:

a)   9728 + 675

Answer: _____ [1]

b)   1003 − 637

Answer: _____ [1]

c)   87 × 93

Answer: _____ [2]

d)   7799 ÷ 11

Answer: _____ [1]

2.   Calculate

a) $4\frac{1}{2} + 5\frac{3}{4}$

Answer: _____ [1]

b) $7 \times \frac{3}{5}$

Answer: _____ [1]

c) $5\frac{2}{5} - 2\frac{4}{5}$

Answer: _____ [1]

Total (/8)

3. Find the missing numbers in each of these sequences.
Write your answers in the boxes provided

a) 50   42   34   [   ]   18

b) 2.302   2.304   2.306   2.308   [   ]

c) 4   7   13   25   49   [   ]

d) 100   81   64   49   36   [   ]

e) [   ]   3.5   7   14   28

[5]

4. a)   Write $\frac{14}{20}$ as a **decimal**

Answer: _____ [1]

b)   Write 0.625 as a **fraction** in its <u>lowest terms</u>

Answer: _____ [2]

c)   Write the answer to $\frac{13}{20} + 0.1$ as a **percentage**

Answer: _____ [1]

d)   Give the ratio 36 : 84 in its **simplest form**

Answer: _____ [1]

Total (/10)

5. A greengrocer is selling the following fruits:

    Grapes at £1.54 per kilogram
    Melons at £1.79 each
    Nectarines at 87p per punnet

    a) What is the total cost of ½ kg of grapes, 2 melons and 3 punnets of nectarines? Give your answer in £

    Answer: £_____ [2]

    b) How much change would you get from £10 if you bought 1 kg of grapes, 1 melon and 1 punnet of nectarines? Give your answer in £

    Answer: £_____ [2]

6. Find the number that is exactly halfway between 6.7 and 9.1

    Answer: _____ [1]

    Total (/5)

7. Give one answer only for each of the following questions:

a) Write down any multiple of 8 between 50 and 70

Answer: _____ [1]

b) Write down a prime number between 48 and 60

Answer: _____ [1]

c) Write down a factor of 90 that is between 12 and 25
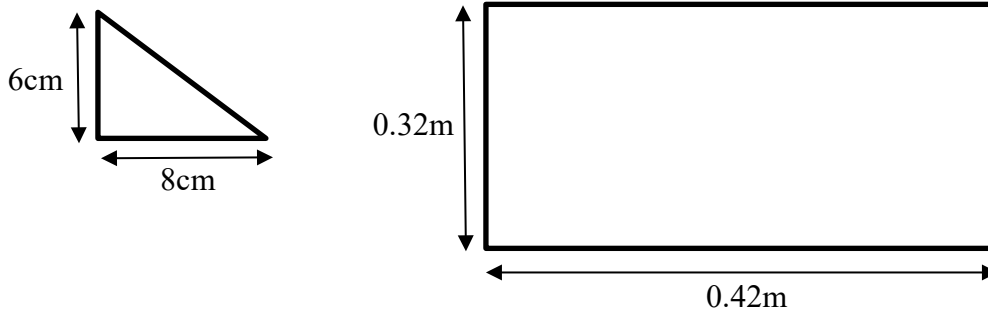
Answer: _____ [1]

d) Write down a square number between 30 and 60

Answer: _____ [1]

e) Write down a 2-digit number that is both a square number and cube number

Answer: _____ [1]

8. How many small triangles would fit exactly into the larger rectangle?

6cm

8cm

0.32m

0.42m

Answer: _____ [3]

Total (/8)

9. Arrange these numbers in order from the smallest to the largest.

$^4/_5$ 0.82   0.802   8%   9 hundredths $^3/_4$

_____ _____ _____ _____ _____ _____

[3]

10. A train leaves Manchester and arrives in London at 13:37
What time did the train depart Manchester if the total journey time was 173 minutes?

Answer: _____ [3]

11. The temperature at midday in Moscow is -3^OC. Between midday and midnight the temperature in Moscow rises by $5\,^OC$ and then falls by $11\,^OC$. What is the temperature at midnight in Moscow?

Answer: _____ [2]

12. In a class the ratio of boys to girls is 2 : 3

a) How many boys are in the class if there are 15 girls?

Answer: _____ boys [1]

b) How many **more** girls than boys are there in a class of 35 pupils?

Answer: _____ more girls [2]

Total (/11)

13. I think of a number, add 4 and then multiply by 3. The result is 63.
What was the number I thought of?

Answer: _____ [2]

14. You are given that 44460 ÷ 780 = 57
Use this result to give the answers to the questions below:

a) 44460 ÷ 57 =

Answer: _____ [1]

b) 57 × 780 =

Answer: _____ [1]

c) 4446 ÷ 5.7 =

Answer: _____ [1]

d) 7.8 × 5.7 =

Answer: _____ [1]

e) 3 x 78 × 19 =
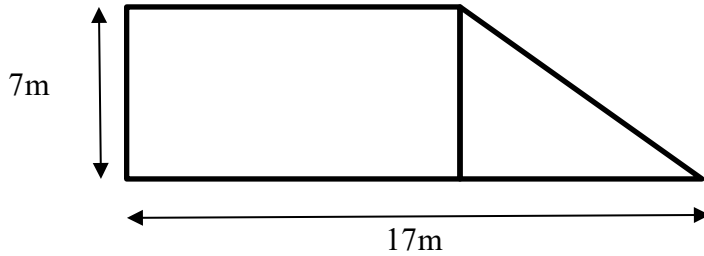
Answer: _____ [1]

15. Calculate (40% of 90) + ($^3/_7$ of 63)
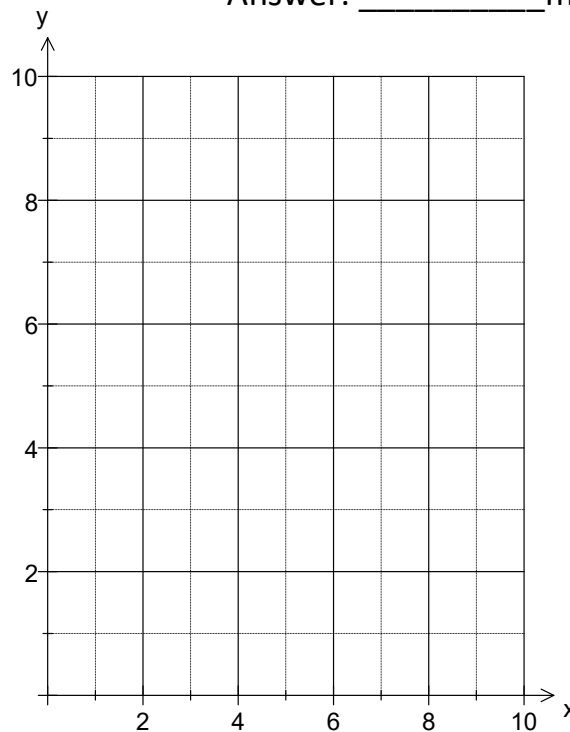
Answer: _____ [2]

Total (/9)

16. The rectangle and triangle below have the same height.

If the perimeter of the rectangle (all 4 sides) is 32m, what is the area of the triangle?

Answer: _____m² [3]

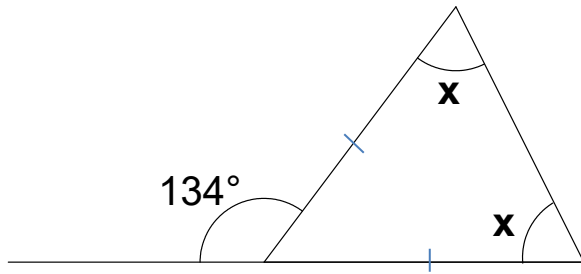17. a) On the grid mark with a clear cross the coordinates (1, 3), (6, 3) and (4, 5).

[2]

b) A fourth point is plotted so that the shape above is a PARALLELOGRAM
What is the coordinate of the point to be plotted?

Answer: (_____,_____) [1]

Total (/6)

18. The triangle in the diagram below is isosceles.
Calculate angle **x**

134°

X

X

Answer: x = _____° [2]

19. Edward has a sum of money. He gives one-third to his son George and three-fifths to his daughter Olivia. If George receives £15, how much does Olivia receive?

Answer: £_____ [3]

20. A bag contains coloured balls. There are **4 red**, **2 blue** and **1 green** in the bag.

a) What fraction of the balls are **red**?

Answer: _____ [1]

b) How many **green** balls must be **added** to the bag if the fraction of **green** is now $^1/_3$?

Answer: _____ [1]

c) How many **blue** balls must be **added** to the bag you started with if the fraction of **blue** is now $^1/_2$?
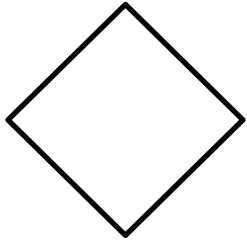
Answer: _____ [1]

d) How many **red** balls must be **removed** from the bag you started with if the percentage of **green** is now 25%?
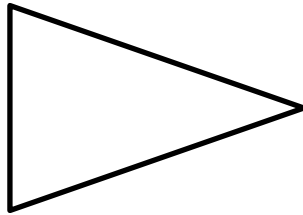
Answer: _____ [1]

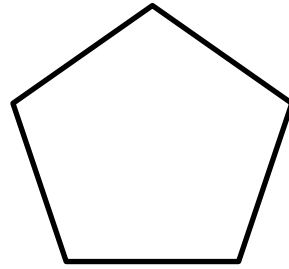Total (/9)

21. Draw <u>all</u> the lines of symmetry on the shapes below:

[3]

Square   Isosceles Triangle   Regular Pentagon

22. To make 6 scones you need the following:

120g of flour
70g of butter
150ml of milk

a) How much flour would be needed to make 7 scones?

Answer: _____g [2]
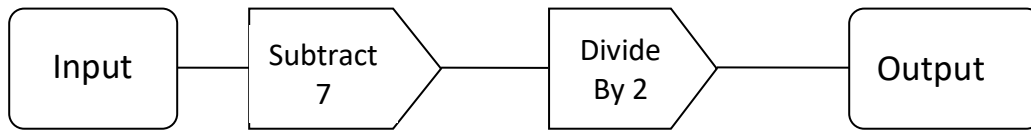
b) How much butter is required to make 9 scones?

Answer: _____g [2]

c) What is the maximum number of scones you can make with 1 litre of milk?

Answer: _____ [2]

Total (/9)

23.

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┌──────────┐      ╔═══════════╗      ╔═══════════╗      ┌──────────┐
│  Input   │──────║ Subtract  ╲─────║  Divide   ╲──────│  Output  │
│          │      ║    7      ╱      ║  By 2     ╱      │          │
└──────────┘      ╚═══════════╝      ╚═══════════╝      └──────────┘
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a)   If the input is 16, what is the output?

Answer: _____   [1]

b)   If the input is 1, what is the output?

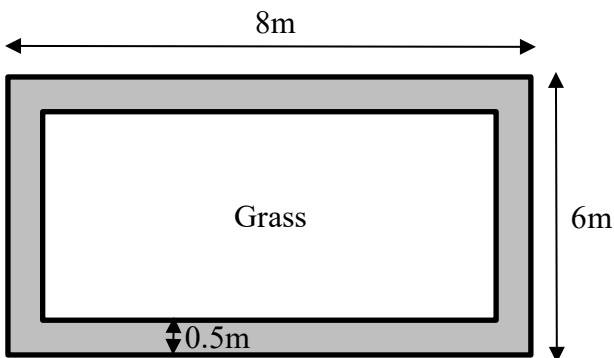Answer: _____   [1]

c)   If the output is 3, what is the input?

Answer: _____   [2]

d)   If the output is n, what is the input?

Answer: _____   [2]

24.   The diagram below represents a rectangular grass lawn surrounded by a gravel path on the outside. The width of the path is 0.5m.
Gravel costs £5.70 per m^2.
What is the cost of gravel required to cover the path?

8m

Grass

6m

0.5m

Answer: £_____   [4]

Total (/10)

25.   A minibus can carry a maximum of 17 people.

       a) How many minibuses are required to take a total of 300 people on a trip?

                                                    Answer: _____ [2]

       b) How many empty seats will there be in total?

                                                    Answer: _____ [1]

           c) A minibus costs £80 to hire for the day. Tickets for the theme park cost
               £15 each. Write a formula for the total cost 'C' of hiring 'm' minibuses
               and purchasing 't' tickets.

                                                    Answer: C = _____ [2]

26.   I am thinking of a 2-digit number.
       When the number is divided by 5 the remainder is 2.
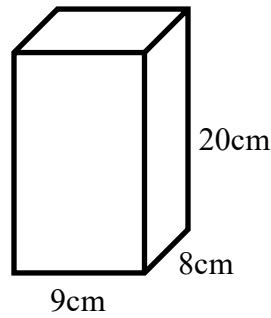   When the number is divided by 7 the remainder is 4.
       What is the smallest 2-digit number that I was thinking of?

                                                    Answer: _____ [2]

                                                    Total (/7)

27.

The diagram represents a carton of orange juice in the shape of a cuboid.
The carton is full.

20cm

8cm

9cm

a) Using the formula Volume = length x width x height, calculate the volume of orange juice in the carton.

Answer: _____ cm^3 [2]

b) A cup holds 120 cm^3 of liquid.
How many cups can be filled from the full carton of orange juice?

Answer: _____ [2]

c) Jane drinks 216cm^3 of orange juice from the carton.
What is the new height of orange juice in the carton?

Answer: _____ cm [2]

28. Homer, Marge and Bart each have $1000.
Homer gives 10% of his money to Marge. Marge then gives 10% of her new amount to Bart. Bart then gives 10% of his new amount to Homer.
How much has Homer got now?

Answer: $_____ [2]

Total (/8)

END OF EXAMINATION

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