

9/1 Put a circle round the correct answer:

What is the value of  $x$ , which makes this equation true?

$$3x^2 + 5x - 1 = 41$$

A 1                      b 2                      c 3                      D 4

9/2 What do the numbers from 1 to 10 add to?

9/3 What is the difference between the biggest 3-digit number and the smallest 4-digit number?

9/4 My house was built in 1931. The first person kept it for 45 years, the second for 20 years and I have owned it for 10 years. For how long did the third owner own the house?

9/5 The operation @ is defined as  $a@b = \frac{a}{b} + \frac{b}{a}$ . Find the value of  $8@16$

9/6 There are four rabbits in a garden. Between them, they eat 20 carrots. Each rabbit eats a different amount of carrots. These four amounts are even numbers. How much could each rabbit have eaten?

9/7 Apart from  $1 \times 2019$ , what other pair of numbers multiply to 2019?

9/8  $y = \frac{1}{x}$  what is the value of  $x$  in terms of  $y$ ?

9/9 Find a set of 3 numbers that have the following qualities:

Mean = 4

Median = 4

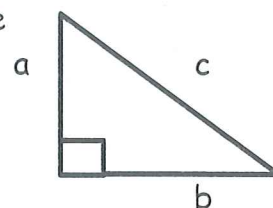
Mode = 4

9/10 Which 2-digit square number has the property that when the two digits are multiplied together, you get another square number.

9/11 Pythagoras Theorem states that in a right-angled triangle

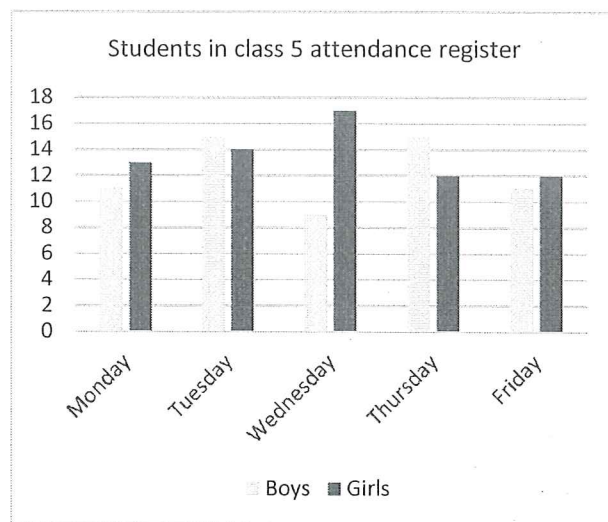
$$a^2 + b^2 = c^2$$

If  $a = 12$  and  $b = 5$ , what is the value of  $c$ ?



9/12 A4 paper is 210mm by 297mm. What is the area of A4 paper in  $m^2$ ?

9/13 There are 32 students in class 5. On what day or days were all the boys present?



9/14

1	11	12	23
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1			55
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No zeros are used to complete these 4-box. Complete the second 4-box.

9/15  $a \times b = 6$ ,  $b \times c = 14$ ,  $c \times a = 21$  [a, b, c are positive integers]

What is  $a + b + c$ ?

9/16 I have a length of rope that I want to use to mark off a rectangular area on the grass, I use the whole length every time. I can make many different rectangles, two I made have an area of  $96\text{cm}^2$  and an area of  $225\text{cm}^2$ .

What is the greatest rectangular area I can make with this length of rope?

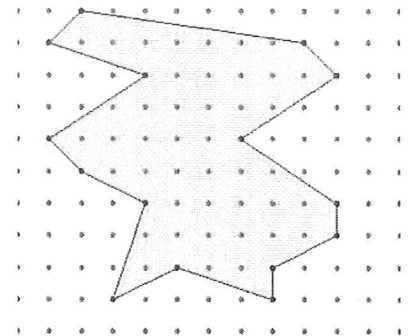
9/17 My number has two digits which add to 11 and is prime.

Find all the different numbers it could be.

9/18 Pick's Rule says that an area with dots on the perimeter (P) and dots in the interior (I) can be found using this rule:

Area = half the P dots plus the I dots minus 1

Use Pick's Rule to find the area of this figure.



9/19 What are the last two digits of  $7^{2019}$ ?

9/20 Using only integer values, find the cuboid with a volume of  $36\text{cm}^3$  that has the largest surface area.

MATHEX QUIZ ANSWERS Year 9 2019  
No units required

Number	Answers	Comment
1	$C(3)$	either
2	55	
3	1	
4	13	years
5	2.5 or $2\frac{1}{2}$ or $\frac{5}{2}$	
6	2, 4, 6, 8	All in any order
7	$3 \times 673$ or 3, 673	Either
8	$\frac{1}{y}$	Accept $X = \frac{1}{y}$
9	4, 4, 4	All
10	49	
11	13	
12	0.06237	m <sup>2</sup> accept 0.0623 or 0.0624
13	Tuesday and Thursday	Both, either order
14	27, 28	Both in order
15	12	
16	625	cm <sup>2</sup>
17	29, 47, 83	All, any order
18	49.5	
19	43	
20	$1 \times 1 \times 36$	All, in any order

# MATHEX QUIZ ANSWERS Year 9 - 2019

No units required

Number	Answers	Comment
20	$1 \times 1 \times 36$	All, in any order
19	43	
18	49.5	
17	29, 47, 83	All, any order
16	625	cm <sup>2</sup>
15	12	
14	27, 28	Both in order
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