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Divisibility Rules - 3, 6, 9



- 1 Determine if 348 is divisible by 3, 6, or 9.
- 2 Recall the divisibility rules for 3, 6, and 9.
- 3 Decide if numbers are divisible by 2, 3, 6, or 9.
- 4 Explain how Olivia can level up if she has 1356 points.
- 5 Calculate the different ways in which Olivia's grandmother can level up if she has 5634 points.
- 6 Figure out the different ways Olivia can level up if she has a certain number of points.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



Determine if 348 is divisible by 3, 6, or 9.

Select all divisors by which 348 is divisible.



Olivia wants upgrade her Creature, but it is only possible to upgrade the attributes health, attack, and defense if her Experience Points (XPs), 348, are evenly divisible by 3, 6, or 9. Which ones can she level up?

To level up health, Olivia needs a number of XPs that is divisible by 3.

To level up attack, Olivia needs a number of XPs that is divisible by 6.

To level up defense, Olivia needs a number of XPs that is divisible by 9.

Olivia has 348 Experience Points. Which attributes can she level up?

health A

attack B

defense C

none D



Hints for solving these problems

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of 6

Determine if 348 is divisible by 3, 6, or 9.

Hint #1

You can use the divisibility rules for 3, 6, and 9 to complete this task.

Hint #2

The divisibility rules for 3 and 9 are similar.

Hint #3

The first step in the divisibility rules for 3 and 9 is to sum all of the digits in the number.

Hint #4

Each number which is divisible by 2 and 3 is divisible by 6, too.



Answers and detailed answer explanations for these problems

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of 6

Determine if 348 is divisible by 3, 6, or 9.

Answer key: A, B

Divisibility Rule for 3

The first step in checking if a number is divisible by three is to sum all the digits. If the resulting sum is divisible by 3, then the original number is also divisible by 3. For example, with the number 348:

$$3 + 4 + 8 = 15$$

15 is divisible by 3, so 348 must also be divisible by 3.

Divisibility Rule for 6

If a number is divisible by 2 and 3, then it is also divisible by 6. To check if a number is divisible by two, look at its last digit. If the last digit is 0, 2, 4, 6, or 8, then the number is divisible by 2. To check if a number is divisible by three, follow the instructions above.

So, the number 348 is divisible by 2 because the last digit is 8. We already found that it is also divisible by 3, so it must be divisible by 6 as well.

Divisibility Rule for 9

Just like the divisibility rule for 3, the first step in checking if a number is divisible by 9 is to sum all the digits. If the resulting sum is divisible by 9, then the original number is divisible by 9. Using the number 348 as an example:

$$3 + 4 + 8 = 15$$

15 is not divisible by 9, so neither is 348.