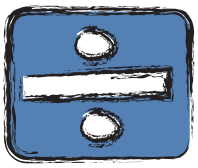
Name _____ Date _____

Dividing by 2 and 3 Using Patterns



Everyone should memorize the multiplication tables. Sometimes, though, there are other ways to quickly multiply and divide numbers by recognizing patterns.

To divide by 2 you can memorize the multiplication table, or you can recognize that dividing a number by 2 is just figuring out what *half* of the number is. For example:

6 divided by 2 = 3. *Half* of 6 is 3. You know this because 3 + 3 is 6. So, if you know *half* of 6 is 3, then you know how to divide by 2.

This works for bigger numbers too. 860 divided by 2 = 430. This means that 430 + 430 = 860 (which also means that 430 is *half* of 860). And 1,428 divided by 2 = 714. This means that 714 + 714 = 1,428 (which also means that 714 is *half* of 1,428).

To divide by 3 you can memorize the multiplication table, or you can recognize that dividing a number by 3 is just figuring out what *one-third* of the number is. For example:

6 divided by 3 = 2. *One-third* of 6 is 2. You know this because 2 + 2 + 2 is 6. So, if you know *one-third* of 6 is 2, then you know how to divide by 3.

This works for bigger numbers, too. 963 divided by 3 = 321. This means that 321 + 321 + 321 = 963 (which also means that 321 is *one-third* of 963). And 3,369 divided by 3 = 1,123 . This means that 1,123 + 1,123 + 1,123 = 3,369 (which also means that 1,123 is *one-third* of 3,369).

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Solve the division problems below using this method, and explain your answer.

Ex: 42 divided by 2 = _____ . 21 + 21 = 42. Therefore, half of 42 = 21.

1. 40 divided by 2 = 20 .

2. 44 divided by 2 = 22 .

3. 68 divided by 2 = 34 .

4. 100 divided by 2 = 50 .

5. 146 divided by 2 = 73 .

Ex: 42 divided by 3 = _____ . 14 + 14 + 14 = 42. Therefore, one-third of 42 is 14.

6. 9 divided by 3 = 3 .

7. 15 divided by 3 = 5 .

8. 21 divided by 3 = 7 .

9. 33 divided by 3 = 11 .

10. 51 divided by 3 = 17 .