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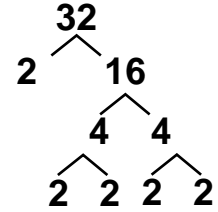
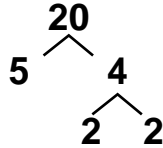
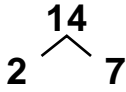
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These are factor trees. A factor tree is used to determine the prime factors of a number. (Reminder: A prime factor is a number that can only be the product of one and itself.)



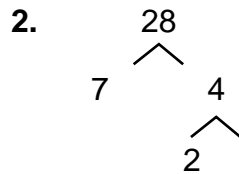
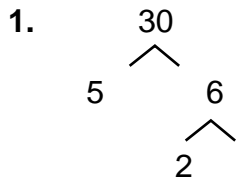
The prime factors of 14 are 2 and 7. ($2 \times 7 = 14$)

The prime factors of 20 are 5 and 2. ($5 \times 2 \times 2 = 20$)

The prime factor of 32 is 2. ($2 \times 2 \times 2 \times 2 \times 2 = 32$)

Factor trees can be made using several patterns to reach the prime numbers. Whichever tree pattern you choose, you will eventually reach the same prime numbers.

Directions: Use factor trees to determine the prime factors of these numbers. The first two are started for you.



5. 50

6. 66

7. 77

8. 63

9. 15

10. 18

11. 22

12. 36

13. 8

14. 64

15. 25

16. 125

•••• Multiply with Larger Multipliers and Multiplicands

Facts to Know

To multiply 498×76 , follow this sample.

Step by Step

1. Write the problem using the ladder form.

$$\begin{array}{r} 498 \\ \times 76 \\ \hline \end{array}$$

2. Multiply 6 ones (6) times 498.

$$\begin{array}{r} 54 \\ 498 \\ \times 76 \\ \hline \end{array}$$

3. Remember to regroup the 4 into the tens place and the 5 into the hundreds place. The answer (6×498) is 2,988. This is called a partial product since it represents only part of the product. (**Helpful Hint:** The number of partial products matches the number of digits in the multiplier. For example, if the multiplier is 25 there will be two partial products.)

$$\begin{array}{r} 2988 \text{ partial product} \\ (6 \times 498) \end{array}$$

4. Write the automatic zero in the ones place below the 8. You have already multiplied by the ones place number (6). The zero is a reminder that you are now multiplying by the tens place digit (7).

$$\begin{array}{r} 54 \\ 498 \\ \times 76 \\ \hline 2988 \text{ (6 x 498)} \\ 0 \text{ automatic zero} \end{array}$$

5. Multiply 7 tens (70) times 498.

cross out
or erase

$$\begin{array}{r} \rightarrow \cancel{65} \\ 498 \\ \times 76 \\ \hline \end{array}$$

6. Place the answer next to the 0.

$$\begin{array}{r} 2988 \text{ (6 x 498)} \\ 34860 \text{ (70 x 498)} \\ \hline \end{array}$$

7. Remember to regroup the 5 into the tens place and the 6 into the hundreds place.

8. Add the two partial products.

9. Place a comma in the answer every three digits starting at the ones place and moving left.

$$\begin{array}{r} 498 \\ \times 76 \\ \hline 2988 \text{ (6 x 498)} \\ + 34860 \text{ (70 x 498)} \\ \hline 37,848 \end{array}$$

10. The answer is 37,848.