EXAMPLE  What is 15% of 44?

15% of 44 is the sum of 10% of 44 and 5% of 44.

We can use fractions to see why this is true:

\[
\frac{15}{100} \cdot 44 = \left( \frac{10}{100} + \frac{5}{100} \right) \cdot 44 = \left( \frac{10}{100} \cdot 44 \right) + \left( \frac{5}{100} \cdot 44 \right).
\]

10% of 44 is 4.4.

5% of 44 is half of 10% of 44. So, 5% of 44 is \(4.4 \div 2 = 2.2\).

Therefore, 15% of 44 is \(4.4 + 2.2 = 6.6\).

PRACTICE  Write each amount below as a whole number or decimal.

85. Find the following percents of 18.

50% of 18 = _____  
10% of 18 = _____  
1% of 18 = _____  

20% of 18 = _____  
51% of 18 = _____  
99% of 18 = _____  

86. Find the following percents of 196.

50% of 196 = _____  
10% of 196 = _____  
25% of 196 = _____  

5% of 196 = _____  
35% of 196 = _____  
250% of 196 = _____  

87. Find the following percents of 3.2.

50% of 3.2 = _____  
10% of 3.2 = _____  
200% of 3.2 = _____  

60% of 3.2 = _____  
210% of 3.2 = _____  
21% of 3.2 = _____
PRACTICE
Solve each of the problems below to help you find more strategies for computing with percents.

88. Write each of the following amounts as a whole number or decimal.

9% of 100 = _______ 9% of 50 = _______ 9% of 150 = _______

89. Write each of the following amounts as a whole number or decimal.

75% of 1,000 = _______ 75% of 60 = _______ 75% of 1,060 = _______

90. Circle every expression below that is equal to 60% of 75.

6% of 750 30% of 150 300% of 15 600% of 750

91. 12.5% of 24 is equal to 25% of what number? 91. _______

92. 20% of 412 is equal to 10% of what number? 92. _______

93. 7% of 11 is equal to 1% of what number? 93. _______

94. 48% of 75 is equal to 75% of what number? 94. _______
In a **Percent Square** puzzle, the goal is to fill every empty square in the grid according to the following rules:

- Each square must contain a single positive digit.
- The percent next to a row or above a column gives the percent of the row’s or column’s sum that is in its shaded square(s).

**EXAMPLE**

Solve the Percent Square on the right.

Each percent can be written as a fraction in which the numerator is the sum of the shaded square(s) in the row or column, and the denominator is the sum of the whole row or column.

The fraction of the top row that is shaded is 37.5% = \( \frac{3}{8} = \frac{6}{16} = \frac{9}{24} = \frac{12}{32} = \frac{15}{40} = \ldots \).

Since each square contains a digit, we can ignore any fraction whose numerator is greater than 9, or whose denominator is greater than 9 + 9 = 18. This leaves 37.5% = \( \frac{3}{8} = \frac{6}{16} \).

If we use 37.5% = \( \frac{3}{8} \), then the top-left square is 3, and the top-right square is 16 – 6 = 10, which is not a digit.

If we use 37.5% = \( \frac{3}{8} \), then the top-left square is 3, and the top-right square is 8 – 3 = 5.

This works! We can use the remaining clues to complete the puzzle as shown below.

```
  50%  
37.5% 3  5
  40% 3  2
```

**PRACTICE**

Solve each Percent Square puzzle below.

95. 96. 97. 98. 99. 100.