Unit 3, Lesson 15

Finding This Percent of That

Let's solve percentage problems like a pro.

15.1 Math Talk: Multiply and Divide

Find the value of each expression mentally.

- $70 \div 100$
- $35 \cdot \frac{1}{100}$
- $(0.35) \cdot 100$
- $\frac{105}{100}$

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15.2 Audience Size

A school held several evening activities last month—a music concert, a basketball game, literacy night, and a drama play. The music concert was attended by 250 people.

1. Attendance at the basketball game was 30% of attendance at the concert.

2. Attendance at literacy night was 44% of attendance at the concert.

3. Attendance at the drama play was 102% of attendance at the concert.

How many people came to each of these activities? Show your reasoning.

Are you ready for more?

6% of the people who attended the music concert also attended the basketball game.

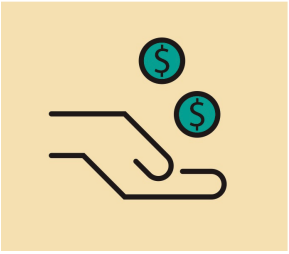
What percentage of the people who attended the basketball game also attended the music concert?

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15.3 Some Percentage for Charity

1. Three music artists plan to donate a percentage of the money they make from selling merchandise.

   Complete the tables to show how much each artist would donate for different amounts of merchandise sales.



   a. Artist A plans to donate 1% of the amount of merchandise sales.

sales ($)	1	40	100	3,200	x
donation ($)					

   b. Artist B plans to donate 15% of the amount of merchandise sales.

sales ($)	1	40	100	3,200	x
donation ($)					

   c. Artist C plans to donate 67% of the amount of merchandise sales.

sales ($)	1	40	100	3,200	x
donation ($)					

2. Another artist plans to donate $P\%$ of the money made from selling merchandise. In the table, write an expression for the amount of donation for each sales amount.

sales ($)	1	40	100	3,200	x
donation ($)					

Lesson 15 Summary

Suppose a business donates 1% of its profits to charity each year. How much would it donate if it made $7,500 in profits?

To find 1% of 7,500, we can multiply 7,500 by $\frac{1}{100}$ or 0.01.

profits (dollars)	percentage
7,500	100
75	1

($\cdot \frac{1}{100}$ from 7,500 to 75; $\cdot \frac{1}{100}$ from 100 to 1)

$\frac{1}{100} \cdot 7{,}500 = 75$, so the business would donate $75.

What if the business donates 6% of its profits to charity? Because 6% of 7,500 is 6 times as much as 1% of 7,500, we can calculate $6 \cdot \frac{1}{100} \cdot 7{,}500$ or $\frac{6}{100} \cdot 7{,}500$.

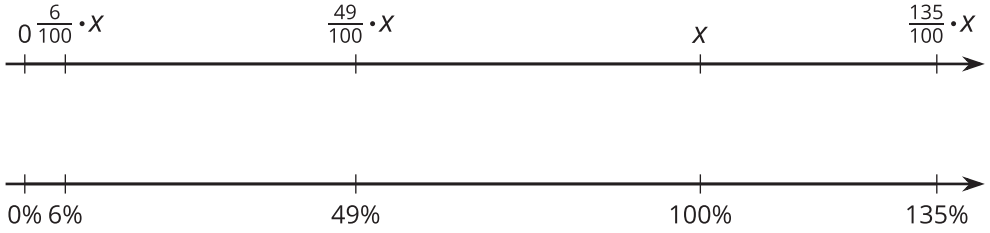
profits (dollars)	percentage
7,500	100
75	1
450	6

($\cdot \frac{1}{100}$ from 7,500 to 75; $\cdot \frac{1}{100}$ from 100 to 1; $\cdot 6$ from 75 to 450; $\cdot 6$ from 1 to 6)

$\frac{6}{100} \cdot 7{,}500 = 450$, so the business would donate $450.

The same reasoning can help us find 1%, 6%, and other percentages of another number:

- To find 1% of a number, we can multiply that number by $\frac{1}{100}$ or 0.01.
- To find 6% of a number, we can multiply the number by $\frac{6}{100}$ or 0.06.
- To find 49% of a number, we can multiply the number by $\frac{49}{100}$ or 0.49.
- To find 135% of a number, we can multiply the number by $\frac{135}{100}$ or 1.35.



In general, to find $P\%$ of any number, x, we can calculate: $\frac{P}{100} \cdot x$.