

Making Sense of Percents

Percents Pretest – Answer Key

Problem number	Percent	Fraction	Decimal
1	4%	$\frac{4}{100} = \frac{1}{25}$	0.04
2	12.1%	$\frac{121}{1000}$	0.121
3	35%	$\frac{35}{100} = \frac{7}{20}$	0.35
4	160%	$1\frac{6}{10} = 1\frac{3}{5}$	1.6
5	12.5%	$\frac{1}{8}$	0.125
6	$55.\bar{5}\%$ or $55\frac{5}{9}\%$	$\frac{5}{9}$	$0.\bar{5}$

Solve the following Percent equations:

7) $50\% \cdot 64 =$

$0.5 \cdot 64 = x$

$32 = x$

8) $p \cdot 20 = 5$

$p = \frac{5}{20} = \frac{25}{100} = 25\%$

9) $p \cdot 225 = 99$

$p = \frac{99}{225} = \frac{11}{25} = \frac{44}{100} = 44\%$

10) $25\% \cdot x = 46$

$\frac{25}{100} \cdot x = 46$

$x = \frac{46}{1} \cdot \frac{100}{25} = \frac{46}{1} \cdot \frac{4}{1} = 184$

11) $6\frac{1}{2}\% \cdot 400 = x$

$x = \frac{6\frac{1}{2}}{100} \cdot 400 = 6\frac{1}{2} \cdot 4 = 24 + 2 = 26$

12) $45\% \cdot x = 16.2$

$\frac{45}{100} \cdot x = 16.2$

$x = \frac{16.2}{1} \cdot \frac{100}{45} = \frac{162}{1} \cdot \frac{10}{45} = \frac{162}{1} \cdot \frac{2}{9} = 18 \cdot 2 = 36$

Now try some Percent Word Problems:

13) Jeanne earns \$1,200 per week and pays 4% state income tax. How much state income tax does she pay each week?

$0.04 \cdot 1200 = x$

$x = \$48$

14) 60% of the people in the world live in Asia. If 3.6 Billion people live in Asia, how many are there in the world?

$0.6 \cdot x = 3.6$

$x = 3.6/0.6 = 36/6 = 6$

6 Billion

15) There were 1040 students at Sunnyville Junior High last year. This year there are 5% more. How many students are there now?

$$1.05 \cdot 1040 = x$$

$$X = 1092$$

16) The number of visitors to the SpidersAreInteresting.com web site was 350 last year and 329 this year. What percentage decrease is this?

$$p \cdot 350 = 21$$

$$p = \frac{21}{350} = \frac{3}{5} = \frac{6}{100} = 6\%$$

17) A \$45.00 sweater is on sale at 35% off. What's the sale price?

$$0.65 \cdot 45 = x$$

$$x = \$29.95$$

18) It costs me \$46 to fill my minivan with gas. That's 15% more than last year! What did it cost last year?

$$1.15 \cdot x = 46$$

$$\frac{115}{100} \cdot x = 46$$

$$\frac{23}{20} \cdot x = 46$$

$$x = \frac{46}{1} \cdot \frac{20}{23} = 40$$

It cost \$40.

19) A store pays \$60.00 for a coat and marks it up 150%. Later the store puts it on sale 40% off. What is the sale price?

$$1.5 \cdot 60 = x$$

$$x = 90$$

$$\text{Mark up} = \$90$$

$$\text{Price} = \$150$$

$$0.4 \cdot 150 = x$$

$$x = \$60$$

$$\text{discount} = \$60$$

$$\text{sale price} = \$90$$

20) A lawyer, who was asked to collect \$16,000, managed to collect 75% of the claim, and charged 15% of the amount collected for his services. How much did the lawyer turn over to his client?

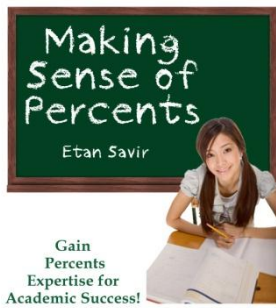
$$0.75 \cdot 16000 = x$$

$$x = \$12,000 = \text{amount collected}$$

$$0.15 \cdot 12000 = x$$

$$X = 1,800 = \text{service charge}$$

$$\$10,200 = \text{amount to client}$$



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Percents Pretest Scoring Guide:

- 19-20 correct:** You are a percents pro! Way to go!
- 17-18 correct:** You're at the level of a well prepared High School student.
- 12-16 correct:** You have a basic understanding of percents, but can't necessarily handle all the percent problems you might encounter either in school or real life.
- With a little more study and practice you can achieve a much stronger understanding of percents concepts.
- Fewer than 11 correct:** This is an unsatisfactory result even for a Middle School student, let alone a High School student (or an adult).
- You'll find it hard to solve some of the percents problems you'll encounter in classes like Physics, Chemistry, Alegbra 1 and 2, and Economics.
- You should do more comprehensive percents study and practice problems.