

__ HOW TO FIGURE PERCENT __

This learning packet will take you through the basic steps of working with percentages so you can solve problems like the ones below:

Example:

My family has just eaten dinner at our favorite restaurant. The bill is \$32.50, and I would like to leave a 15% tip. How much will the tip be?

RULE: percent x amount (15% x \$32.50)

STEP 1 - Change percent to decimal 15% = .15

STEP 2 - Multiply

$$\begin{array}{r} \$32.50 \text{ two decimal places} \\ \times \quad .15 \text{ two decimal places} \\ \hline 16250 \\ \quad 3250 \\ \hline 48750 = 4.8750 \end{array}$$

STEP 3 - Count the decimal places (two + two = four decimal places) 4.8750

STEP 4 - Round off 4.8750 = \$4.88

The tip will be \$4.88.

Example:

I have purchased a new freezer. The total cost, including tax, is \$799.22. The store has a 5% delivery charge. How much is the delivery charge?

RULE: percent x amount (5% x \$799.22)

STEP 1 - Change percent to decimal = .05 (zero added)

STEP 2 - Multiply \$799.22 two decimal places

$$\begin{array}{r} \underline{x .05} \quad \text{two decimal places} \\ \$39.9610 \quad \text{four decimal places} \end{array}$$

STEP 3 - Count the decimal places.

STEP 4 - Round off $\$39.9610 = \39.96

The delivery charge will be \$39.96.

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The attached learning packet provides more practice on the steps of figuring percent and several word problems to do. Use any part or all of the packet to review figuring percent.

PERCENT REVIEW

This packet is provided to help you review or learn a skill. Feel free to use only the parts you need.

Example: Percent means "in each 100." Percent is written "%"

1% is 1 in each 100

7% is 7 in each 100

15% is 15 in each 100

TRY IT # 1

(All **TRY IT** answers begin on page 12.)

6% is in each

24% is in each

 is 3 in each

31_ is in each

Example: Percent is often used with money.

1% is .01 in each \$1.00

7% is .07 in each \$1.00

15% is .15 in each \$1.00

TRY IT # 2

6% is in each \$1.00

24% is in each \$1.00

 is .03 in each \$1.00

 is .31 in each

To work percent problems with numbers other than 100 (\$1.00), use these steps.

STEP 1 - Change the percent to a decimal.

- a. Drop the percent sign: 15% becomes 15
- b. Count two places to left: 15
- c. Add the decimal point: .15

TRY IT # 3

26% .26 75%

52% 68%

17% 41%

Note: When the percent is less than 10% it is necessary to add a zero as a place holder:

- a. Drop the percent sign: 6% become 6
- b. Count two places to the left: 06

c. Add the zero and decimal point: .06

TRY IT # 4

4% .04 1%

2% 9%

7% 8%

STEP 2 - Multiply the decimal from Step 1 times the number in the problem. When you do problems like this, keep in mind that 'of' means multiply.

Example: Find 5% of 40.

- a. Change 5% to .05
b. Multiply:
- $$\begin{array}{r} 40 \\ \times .05 \\ \hline 2.00 \end{array}$$

STEP 3 - Count the number of decimal places in the problem to find the number of decimal places required for the answer.

Example: 5% of 40.

- a. 40 no decimal places
x.05 two decimal places
2.00 two decimal places

Example: Find 5% of \$41.00

- a. \$41.00 two decimal places
x .05 two decimal places
2.0500 four decimal places

Example: Find 25% of \$352.21

- a. \$352.21 two decimal places
x .25 two decimal places
176105
70442
\$88.0525 four decimal places

TRY IT # 5

Find 4% of \$70.00

Find 13% of \$150.00

Find 8% of \$600.00

Find 75% of \$29.99

Find 21% of \$549.82

STEP 4 - Round your answer to the nearest cent.

Example: **\$2.0865 = \$2.09**
 \$2.0841 = \$2.08

TRY IT # 6

\$4.7268 =

\$165.8319 =

\$17.5984 =

\$1.9952 =

\$53.5507 =

Note: If you are not sure how to round to the nearest cent, refer to the rounding section of this learning kit.

TRY IT # 7

Find 3% of \$ 95.69

Find 66% of \$ 25.95

Find 9% of \$ 36.99

Find 24% of \$129.95

Find 5% of \$1129.98

Percent in Word Problems

Many word problems require you to figure the percent of a number to find the answer to the problem.

TRY IT # 8

1. At a restaurant, you plan to leave a 15% tip. The bill is \$29.17. What would the tip be? (Hint: Find 15% of 29.17)

- a. \$4.98
- b. \$4.38
- c. \$4.37
- d. \$5.20

Answer:

2. There were 120 employees at the plant. On the day of the storm, 25% of the employees stayed home. How many stayed home?

- a. 35
- b. 26
- c. 90
- d. 30

Answer:

3. John kept \$570 in a bank account which paid interest of 7% a year. If he keeps his money there for one year, how much interest will he earn?

- a. \$38.90
- b. \$36.70
- c. \$39.90
- d. \$42.75

Answer:

Some word problems have more than one step. You may need to add, subtract, multiply or divide as well as figure the percent.

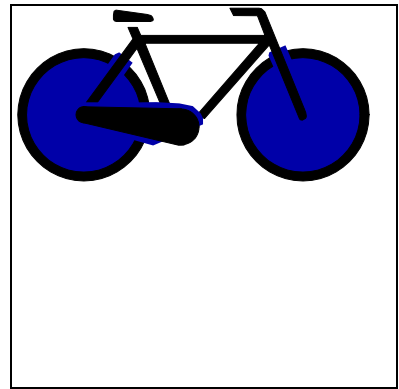
Note: Words such as raise, more, and increase indicate addition, and words such as less, discount, decrease, and off indicate subtraction.

An additional

25% OFF

**Already low clearance prices for
Selected
Children's
Bicycles**

**We're taking
25% off the
already marked
down prices**



Example: Find the reduced price of a bicycle that originally sold for \$109.95.

STEP 1: Find 25% of \$109.95.

$$\begin{array}{r} \$109.95 \\ \times .25 \\ \hline 54975 \\ \underline{21990} \\ \$27.4875 \text{ or } \$27.49 \end{array}$$

STEP 2: Subtract the discount from \$109.95

$$\begin{array}{r} \$109.95 \text{ (original price)} \\ \underline{-27.49 \text{ (25\% off)}} \\ \$82.46 \text{ (sale price)} \end{array}$$

Example: George earns \$680 each week. He has just received a 4% raise. How much will his new salary be? Answer: \$707.20

STEP 1: Find 4% of \$680

$$\begin{array}{r} \$680. \\ \times .04 \\ \hline \$27.20 \text{ (4\% raise)} \end{array}$$

STEP 2: Add the raise to \$680

$$\begin{array}{r} \$680.00 \text{ (salary)} \\ +27.20 \text{ (4\% raise)} \\ \hline \$707.20 \text{ (new salary)} \end{array}$$

Example: Jane has found a \$45 dress which is marked "15% off." What is the sale price of the dress? Answer: \$38.25

a. \$45.

$$\begin{array}{r} \times .15 \\ 225 \\ \hline 45 \\ \hline \$6.75 \text{ (15\%)} \end{array}$$

b. \$45.00 (original price)

$$\begin{array}{r} - 6.75 \text{ (15\% off)} \\ \hline \$38.25 \text{ (sale price)} \end{array}$$

Example: A one-way train ticket to New York costs \$27.00. A round trip ticket is 14% cheaper than two one-way tickets. What does a round trip ticket cost? Answer: \$46.44

a. \$27 (one-way) \$27 (one-way)

$$\begin{array}{r} \times 2 \\ \hline \$54 \text{ (two tickets)} \end{array} \quad \text{or} \quad \begin{array}{r} +27 \text{ (one-way)} \\ \hline \$54 \text{ (two tickets)} \end{array}$$

b. \$54.

$$\begin{array}{r} \times .14 \\ 216 \\ \hline 54 \\ \hline \$7.56 \text{ (14\%)} \end{array}$$

c. \$54.00 (two tickets)

$$\begin{array}{r} - 7.56 \text{ (14\% off)} \\ \hline \$46.44 \text{ (round trip price)} \end{array}$$

TRY IT # 9

1. Your friend earns \$620.00 a week. She says her next raise will be 6%. How much will she ear per week after the raise? Answer: _____.
 - a. \$ 657.20
 - b. \$1,033.33
 - c. \$ 372.00
 - d. \$ 582.80

2. Tomatoes cost .42 per pound at the grocery store. Next week they will go up by 4%. How much will they cost per pound next week? Answer: _____.
 - a. .43
 - b. .44
 - c. .45
 - d. .41

3. Which is the correct sale price for a pair of boots that regularly sells for \$39.99? The shoe store is having a "20% off" sale. Answer: _____.
 - a. \$10.50
 - b. \$ 8.29
 - c. \$ 7.99
 - d. \$31.99

4. When Lumberton County lowered the speed limit, they reported an 8% decrease in highway fatalities. Last year, there were 150 deaths. How many deaths did they have this year? Answer: _____.
 - a. 142
 - b. 158
 - c. 12
 - d. 138

TRY IT # 10

Figure answers to the nearest cent.

1. Find 4% of \$ 70.00
 2. Find 3% of \$500.00
 3. Find 21% of \$633.62
 4. Find 5% of \$800.00
 5. Find 16% of \$237.42
-
1. Onions sell for .50 per pound or 10% less if you buy 5 pounds. How much would 5 pounds of onions cost? Answer: _____.
 - a. \$2.50
 - b. \$2.75
 - c. \$2.25
 - d. \$.25
 2. Joan bought a new bike for \$139.99. The sales tax in her state is 6%. What is the total amount Joan will pay for the bike? Answer: _____.
 - a. \$839.94
 - b. \$146.99
 - c. \$233.32
 - d. \$148.39
 3. Which is the correct sale price for a muffler that regularly sells for \$42.50? The sale price is 20% off. Answer: _____.
 - a. \$34.00
 - b. \$22.34
 - c. \$21.55
 - d. \$51.00

TRY IT # 11

Figure answers to the nearest cent.

Find 4% of \$ 90.00 _____.

Find 8% of \$300.00 _____.

Find 18% of \$456.35 _____.

Find 7% of \$200.00 _____.

Find 22% of \$689.21 _____.

1. A ferry ticket to Staten Island costs \$9.20 one-way. A round trip ticket is 15% cheaper than two one-way tickets. What does a round trip ticket cost?
Answer: _____.
 - a. \$21.16
 - b. \$18.40
 - c. \$15.64
 - d. \$ 2.76

2. Tom owns a hardware store. He pays \$16 for an electric drill and charges his customers a 30% markup. How much does a customer pay for the drill?
Answer: _____.
 - a. \$20.80
 - b. \$11.20
 - c. \$48.00
 - d. \$16.30

3. The population in Bordenton rose 40% last year. The population was 11,400. What is the population now? Answer: _____.
 - a. 2,850
 - b. 15,960
 - c. 4,560
 - d. 20,980

PERCENT ANSWER KEY

TRY IT # 1

6% is 6 in each 100

24% is 24 in each 100

13% is 13 in each 100

31% is 31 in each 100

TRY IT # 2

6% is .06 in each \$1.00

24% is .24 in each \$1.00

13% is .03 in each \$1.00

31% is .31 in each \$1.00

TRY IT # 3

26% .26 75% .75

52% .52 68% .68

17% .17 41% .41

TRY IT # 4

4% .04 1% .01

2% .02 9% .09

7% .07 8% .08

TRY IT # 5

Find 4% of \$70.00 \$ 2.80

Find 13% of \$150.00 \$ 19.50

Find 8% of \$600.00 \$ 48.00

Find 75% of \$29.99 \$ 22.49

Find 21% of \$549.82 \$115.46

TRY IT # 6

\$4.7268 = \$ 4.73

\$165.8319 = \$165.83

\$17.5984 = \$ 17.60

\$1.9952 = \$ 2.00

\$53.5507 = \$ 53.55

TRY IT # 7

Find 3% of \$ 95.69 \$ 2.87

Find 66% of \$ 25.95 \$17.13

Find 9% of \$ 36.99 \$ 3.33

Find 24% of \$129.95 \$31.19

Find 5% of \$1129.98 \$56.50

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- b. \$4.38
- c. \$4.37
- d. \$5.20

Answer: b.

2. There were 120 employees at the plant. On the day of the storm, 25% of the employees stayed home. How many stayed home?

- a. 35
- b. 26
- c. 90
- d. 30

Answer: d.

3. John kept \$570 in a bank account which paid interest of 7% a year. If he keeps his money there for one year, how much interest will he earn?

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- b. \$36.70
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- d. \$42.75

Answer: c.

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 - b. .44
 - c. .45
 - d. .41

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 5. Find 16% of \$237.42 \$ 37.99
-
1. Onions sell for .50 per pound or 10% less if you buy 5 pounds. How much would 5 pounds of onions cost? Answer: c.
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Find 18% of \$456.35 \$ 82.14

Find 7% of \$200.00 \$ 14.00

Find 22% of \$689.21 \$151.63

1. A ferry ticket to Staten Island costs \$9.20 one-way. A round trip ticket is 15% cheaper than two one-way tickets. What does a round trip ticket cost?

Answer: c.

- a. \$21.16
- b. \$18.40
- c. \$15.64
- d. \$ 2.76

9.20	18.40	18.40
<u>x 2</u>	<u>x.15</u>	<u>-2.70</u>
18.40	9200	15.64
	<u>1840</u>	
	2.7600	

2. Tom owns a hardware store. He pays \$16 for an electric drill and charges his customers a 30% markup. How much does a customer pay for the drill?

Answer: a.

- a. \$20.80
- b. \$11.20
- c. \$48.00
- d. \$16.30

16	16.00
<u>x.30</u>	<u>+4.80</u>
00	20.80
<u>48</u>	
4.80	

3. The population in Bordenton rose 40% last year. The population was 11,400. What is the population now?

Answer: b.

- a. 2,850
- b. 15,960
- c. 4,560
- d. 20,980

$\begin{array}{r} 11.400 \\ \times 40 \\ \hline 00000 \\ 45600 \\ \hline 4560.00 \end{array}$	$\begin{array}{r} 11.400 \\ +4.560 \\ \hline 15.960 \end{array}$
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