

Write your
questions here!



5.2 GN Percent Equations

STRAIGHT FORWARD PERCENT EQUATION EXAMPLES:

Method 1: Set up a proportion.

Recall that **percent** means “for every 100” or “out of 100”. We will use this definition to solve problems that contain percents.

$$\frac{\text{percent}}{100} = \frac{\text{is}}{\text{of}}$$

1. Find the “percent”, the “is” and the “of”.
2. Substitute the values into the proportion in the correct places and solve for the unknown value.
3. Check to make sure you have written your answer correctly. (%’s need a “%”!)

Examples:

1. 92% of 42 is what?
2. 145.8 is what percent of 150.1?
3. 19% of what is 20.9?

Method 2: Using key words to write an equation.

When Working With Percent Questions
Three Groups of Interpretations
Will Take You a Long Way...

WHAT?
HOW MUCH?

↓
Interpret
To
↓

WAS
IS
WOULD BE

↓
Interpret
To
↓

OF
ON

↓
Interpret
To
↓

Reminder

A **percent** is simply the number in front of % sign divided by 100

$$\# \% \rightarrow \frac{\#}{100}$$

Ex 1

\$125 is 40% of What number?

Ex 2

What % of \$70 would be \$10.50?

Write your
questions here!



TRANSLATING APPLICATIONS

A three euro tip is what percent of an 18.70€ taxi fare?

What percent of Baumholder HS population (181 students) are freshmen (42 students)?

The following table represents the distribution of dreams Mr. Sullivan has each night.

Algebra	Thundercats	Jar Jar Binks	Farmville	NSync
24%	17%	18%	7%	34%

If Mr. Sullivan dreamt for 380 minutes last night, how many minutes were spent dreaming about NSync?

STRAIGHT FORWARD PERCENT EQUATION EXAMPLES:

% Straight Commission

\$ + % Fixed Salary + Commission

% + % Graduated Commission

% Example

Bill works as a car salesman and earns 1.5% commission on all sales. One month his sales were \$300 000. Determine his pay.

Commission Amount = percentage * sales

\$ + % Example

Sheila sells computers and earns \$1300/mo plus 2% commission on sales. One month she sold \$35 000 worth of product. Determine her pay.

Gross Pay = fixed salary + commission

% + % Example

Matt is a realtor and earns 2.5% on the first \$100 000 of the sale of a home and 3% on any amount over \$100 000. Determine his pay if he sold a property worth \$475 000.

Commission Total = 2.5% commission + 3% commission

Now,
summarize
your notes
here!



4.2 PRACTICE PROBLEMS

- 1) Match the vocabulary to its correct definition (Look back at you notes).

Vocabulary:

- a) Percent
- b) Of
- c) Is
- d) What

Definition

- _____ • "Multiply"
- _____ \times "Replace with an unknown variable"
- _____ $\#/100$ "Divide by 100"
- _____ = "Equals"

Solve each problem.

If necessary, round your answer to the nearest tenth (or tenth of a percent).

2) 102 is what percent of 127.5

3) 48 is 300% of what?

4) 14 is 24% of what?

5) What percent of 84 is 126?

6) What percent of 87 is 87?

7) 55 is what percent of 15?

8) 7% of 29 is what?


9) What is 270% of 21.6?

- 10) Teaching Money. Teacher salaries vary state to state. The average teacher salary in California, the highest paying state, is \$63,640 while the average teacher salary in the lowest state (S. Dakota) is 55.6% of that. What is the average teacher salary in South Dakota?

Equation: _____

- 11) The owner of the Carousel Art Gallery receives a commission of 12% on paintings that are sold on consignment. Find the commission on a painting that sold for \$22,600.

Equation: _____

Solve the following  commission problems. COMMISSION = PERCENTAGE * SALES

- 12) When Mrs. Urquhart worked at Nordstrom's I made 8% sales commission on whatever I sold.

- a) If I sold \$500 worth of merchandise to my customers, how much would I make in commission?

Equation: _____

- b) If I wanted to make \$300 in commission, how much would I have to sell at the same rate?

Equation: _____

7) If a sales person receives a 12% commission on their sales and sells \$1500 worth of merchandise, how much would they earn in commission?

Equation: _____

8) If a sales person receives an 18% commission on their sales, how much would they need to sell in order to earn \$1,000 in commission?

Equation: _____

9) Maria makes money by commission rates. She gets 15% of everything she sells. If Maria sold \$23000 worth of items this month, what is her salary for the month?

Equation: _____

10) Tiffany makes money by commission rates. She gets 21% of everything she sells. If Tiffany sold \$27000 worth of items this month, what is her salary for the month?

Equation: _____

11) Sharon makes money by commission rates. She gets 17% of everything she sells. If Sharon sold \$37000 worth of items this month, what is her salary for the month?

Equation: _____

12) A stockbroker receives a commission of 1.5% of the price of stock that is bought or sold. Find the commission on 100 shares of stock that were bought for \$5600.

Equation: _____

13) The owner of the Carousel Art Gallery receives a commission of 20% on paintings that are sold on consignment. Find the commission on a painting that sold for \$22,500.

Equation: _____

14) A real estate agent received a 6% commission on the selling price of a house. If his commission was \$8,880, what was the selling price of the house?

Equation: _____

15) The owner of the Carousel Art Gallery receives a commission of 20% on paintings that are sold on consignment. Find the commission on a painting that sold for \$22,500.

Equation: _____

16) A real estate agent received a 6% commission on the selling price of a house. If his commission was \$8,880, what was the selling price of the house?

Equation: _____

17) The owner of the Carousel Art Gallery receives a commission of 20% on paintings that are sold on consignment. Find the commission on a painting that sold for \$22,500.

Equation: _____

18) A real estate agent received a 6% commission on the selling price of a house. If his commission was \$8,880, what was the selling price of the house?

Equation: _____

Solve the following



commission problems.

GROSS PAY = FIXED SALARY + COMMISSION

19) Nicole Tobin receives a salary of \$250 per week plus a commission of 15% on all sales over \$1500. Find her earnings during a week in which sales totaled \$3000.

Equation: _____

20) Jose makes 10000 a month plus some money by commission rates. He gets 6% of everything he sells. If Jose sold \$59000 worth of items this month, what is his salary for the month?

Equation: _____

21) Cindy makes \$9000 a month plus some money by commission rates. She gets 10% of everything she sells. If Cindy sold \$30000 worth of items this month, what is her salary for the month?

Equation: _____

22) Peter makes \$7000 a month plus some money by commission rates. He gets 6% of everything he sells. If Peter sold \$55000 worth of items this month, what is his salary for the month?

Equation: _____

23) Sonny works as a furniture salesman and earns a base salary of \$350 per week plus 6% commission on sales. What was Sonny's weekly gross salary if his total sales were \$3750?

Equation: _____

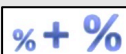
24) Veronica works at Future Shop and earns \$10.50/h plus 6% commission on sales. Last week Veronica worked 40 hours. What was Veronica's weekly gross salary if her total sales were \$2050?

Equation: _____

25) Tiffany makes a base monthly salary of \$3600. As a vendor, she must sell \$17000 worth of items per month. She also makes a 5% commission on all sales beyond the monthly quota. If Tiffany sold \$23800 worth of items this month, what is her total salary for the month including base salary and commission to the nearest dollar?

Equation: _____

Solve the following



commission problems.

COMMISSION TOTAL = COMMISSION 1 + COMMISSION 2

26) Johnny is a realtor and earns 3% commission on the first \$150,000 of the sale of a home and 4% on any amount over \$150,000. Determine his pay if he sold a property worth \$625,000

Equation: _____

27) Johnny is a realtor and earns 4% commission on the first \$100,000 of the sale of a home and 5% on any amount over \$100,000. Determine his pay if he sold a property worth \$420,000

Equation: _____

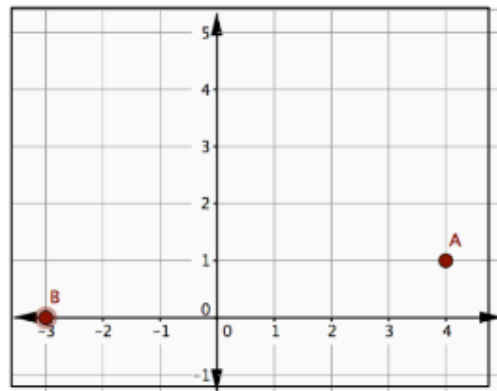
1. Solve:

$$\frac{x}{12} - 7 = -2$$

2. Simplify:

$$13x - (-12x - 5)$$

3. Describe how to move from Point A to Point B:



_____ units in the y direction

_____ units in the x direction

4. Solve:

$$50 - x = 20$$

5. Simplify:

$$21 - 3(2x - 3)$$

6. Describe how to move from point C(3, -1) to Point D(-3, 3):