

Get out your Turkey Picture and turn it into the tray.

Warm-Up

1. Bonita spent \$8.94 on groceries. She bought a gallon of milk for \$4.29 and 3 pounds of sliced turkey. How much does 1 pound of sliced turkey cost?

$$2. \quad \frac{n}{5} + 24.5 = 100$$

The lengths of the sides of a triangle are y , $y + 1$, and 7 centimeters. If the perimeter is 56 centimeters, what is the value of y ?

4. Simplify: $\frac{(2^2 \cdot 5)^3}{2^5 \cdot 5^8}$

$$1) 3x + 4.29 = 8.94$$

$$3x = 4.65$$

$$x = 1.55$$

x - cost for 1 lb. of turkey

The cost is \$1.55 per pound.

$$2) \frac{n}{5} + 24.5 = 100$$

$$\frac{n}{5} + 24.5 - 24.5 = 100 - 24.5 \text{ (subt. prop. =)}$$

$$\frac{n}{5} = 75.5$$

$$5 \cdot \frac{n}{5} = 5 \cdot 75.5 \text{ (mult. prop. =)}$$

$$n = 377.5$$

$$3) y + y + 1 + 7 = 56$$

$$2y + 8 = 56$$

$$2y = 48$$

$$y = 24$$

$$4) \frac{(2^2 \cdot 5)^3}{2^5 \cdot 5^8} = \frac{2^6 \cdot 5^3}{2^5 \cdot 5^8} = \frac{2}{5^5}$$

$$= \frac{2}{3125}$$

Unit Rates and Ratios

ratio: shows the relationship between two quantities

Written three different ways:

fraction: a/b

colon: $a:b$

words: a to b

rate: a ratio that compares quantities measured in different units

unit rate: a rate with a denominator of 1 unit

Comparing Unit Rates

$$\frac{4}{5}$$

3:8

40 to 10

Are ratios but not unit ratios
the denominator is not 1

$$\frac{\$11.25}{1}$$

375:1

4 to 1

These are unit ratios
the denominator is 1

Any ratio can be converted into a unit ratio by dividing the numerator and the denominator by the denominator.

$$\frac{a}{b} = \frac{a \div b}{b \div b} = \frac{a \div b}{1}$$

example: $\frac{\$25}{2} = \frac{\$25 \div 2}{2 \div 2} = \frac{\$12.5}{1}$

Finding unit Rates

Classwork~ Unit Rate WS

When the denominator of a rate is 1, we call the rate a **unit rate**. We usually use the key word **per** or the division symbol / to indicate a unit rate. For example:

If a student earns \$8.50 per hour, it is the same as \$8.50/hour, and means \$8.50 for every 1 hour of work.

Find each unit rate. Round your answer to the nearest hundredth.

1. type 800 words in 12 minutes <u>66.67</u> words per minute $\frac{800}{12} = 66.67$	2. 192 students in 4 buses <u>48</u> in each bus $\frac{192}{4} = 48$
3. 357 miles in 5 hours _____ miles per hour	4. 8 ducks for \$23.60 \$_____ per duck
5. a 10-lb bag of cherries for \$33.49 _____ per lb	6. 12 chickens lay 30 eggs _____ eggs per chicken
7. Earn \$134 in 8 hours _____ per hour	8. 3 pizzas for \$19.99 _____ each
9. 3500 calories for 6 servings of pie _____ calories per serving	10. 351 chairs in 27 rows _____ chairs in each row
11. \$37.29 for 2 pairs of jeans. _____ each	12. \$37.29 for 2 pairs of ducks _____ per duck
13. 24 senior citizens in 12 RVs _____ in each RV	14. 7 penguins for \$188.88 _____ each

Slope Introduction

Definition: Slope is the ratio of vertical change to horizontal change.

Characteristics:

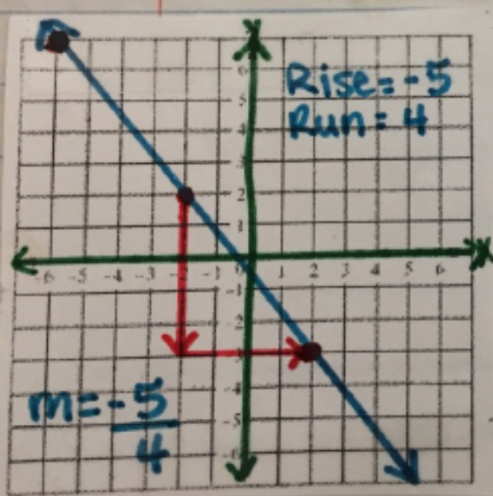
$$\text{Slope} = \frac{\text{rise}}{\text{run}}$$

$$m = \text{slope}$$

*rate of change

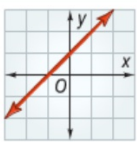
Slope

* Only use this method for straight lines!

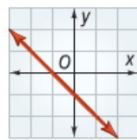


There are four types of slope

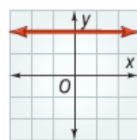
Positive



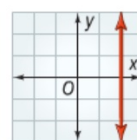
Negative



Zero



Undefined/No Slope



(Rises
from
left to right)

(Falls
from
left to right)

(horizontal
line
y's the same)

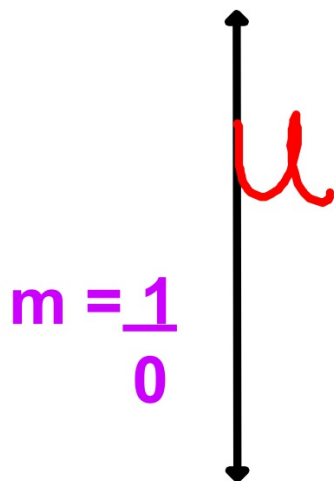
(vertical
line
x's the same)

Slope - $\frac{\text{rise}}{\text{run}} = \frac{\text{the change in } y}{\text{the change in } x} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = m$

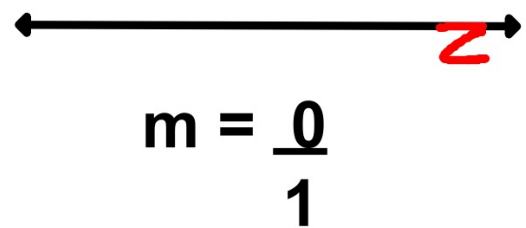
where (x_1, y_1) and (x_2, y_2) are points on the line.

****Another way to remember undefined vs. zero slope.****

Undefined- makes "U"



Zero- makes "Z"



***Zero underneath, it's UNDEFINED!!**

Homework: Worksheet Identifying Slopes as positive, negative, zero or undefined no slope