

Name \_\_\_\_\_

**Compare Proportional Relationship: Practice Sets**

1. Which has the greater rate of change? Circle the correct choice and tell how you know.

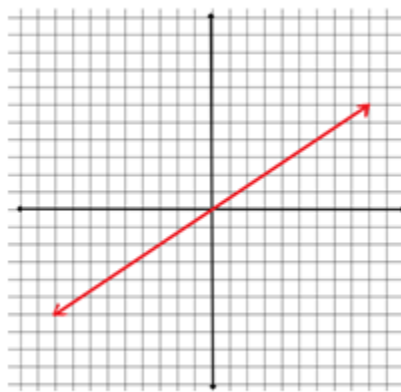
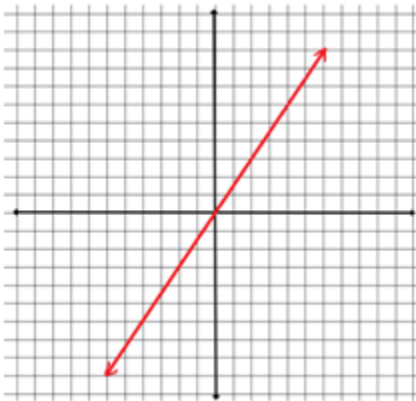
 a. **Car A** that drove at 80 miles per hour, or **Car B** that went 50 miles in 35 minutes

b.

$x$	$y$
0	0
1	5.2
2	10.4
3	15.6
4	20.8

$x$	0	15	30	45	60
$y$	0	75	150	225	300

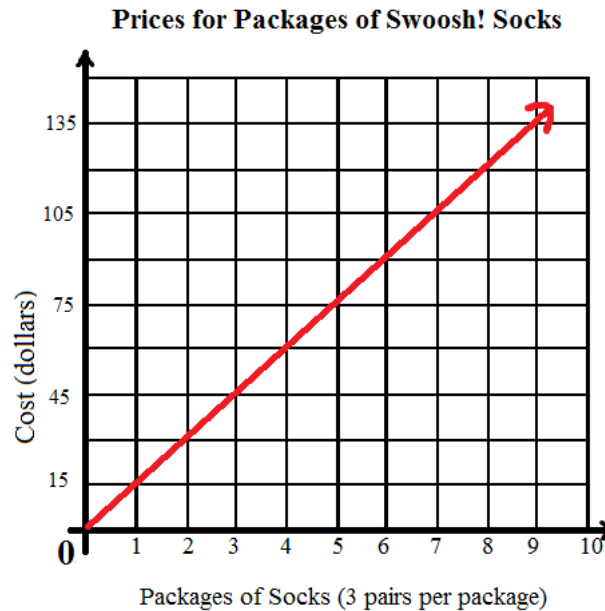
c.


 d.  $y = \frac{2}{3}x$  or  $y = 0.7x$ 

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2. Coach Nadine is stocking up on Swoosh! athletic socks for her team.

This graph represents the price Coach Nadine would spend on the socks at **Store A**:



**Store B** sells a 2-pair package of the same socks for \$12.50

**Store C** only sells those socks in bags of 5 pairs; it has this table in its advertisement:

<b>Bags of Socks</b>	1	2	3	4	5
<b>Price</b>	\$27.50	\$55.00	\$82.50	\$110.00	\$137.50

At **Store D**,  $y = 4.95x$  ( $x$  = number of pairs of socks purchased and  $y$  = total cost in dollars)

List the stores in the order of their prices for each pair of Swoosh! socks from least to most expensive. If Coach Nadine wants to buy 6 pairs of socks for each of her 15 team players, how much would she spend at each store?

## Compare Proportional Relationships, Practice Set A

## Answer Key

1. Which has the greater rate of change? Circle the correct choice and tell how you know.

a. A car that drove at 80 miles per hour, or a car that went 50 miles in 35 minutes

The first car has a unit rate of 80 mph; the second has a unit rate of about 85.7 mph.

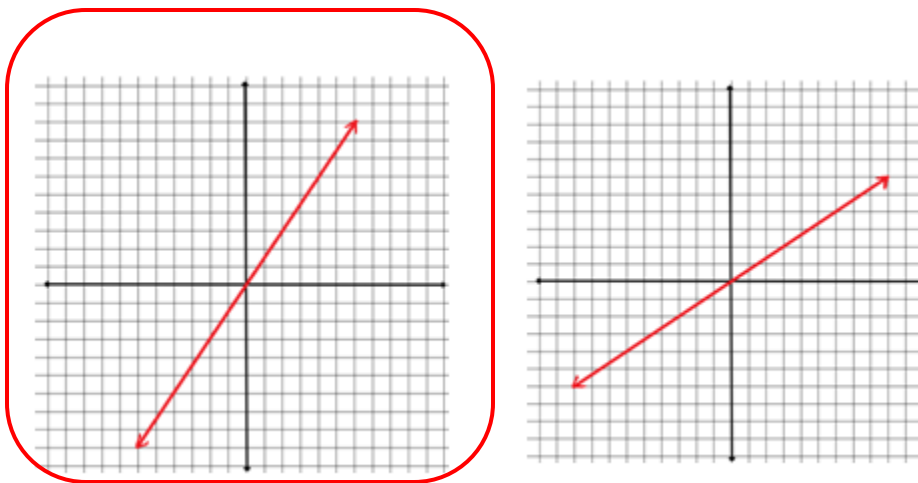
b.

$x$	$y$
0	0
1	5.2
2	10.4
3	15.6
4	20.8

$x$	0	15	30	45	60
$y$	0	75	150	225	300

The first table has a unit rate of 5.2; the second has a unit rate of 5.

c.



The first graph increases faster (is steeper than) the second; over a horizontal change of 5 units (for example), the first graph has a vertical increase of more than 7 units, but the second only has a vertical increase of just over 3 units.

d.  $y = \frac{2}{3}x$  or  $y = 0.7x$

The rate of change is the coefficient of  $x$ ; in the first equation the rate of change is equivalent to 0.6666..., and in the second the value of the coefficient is greater.

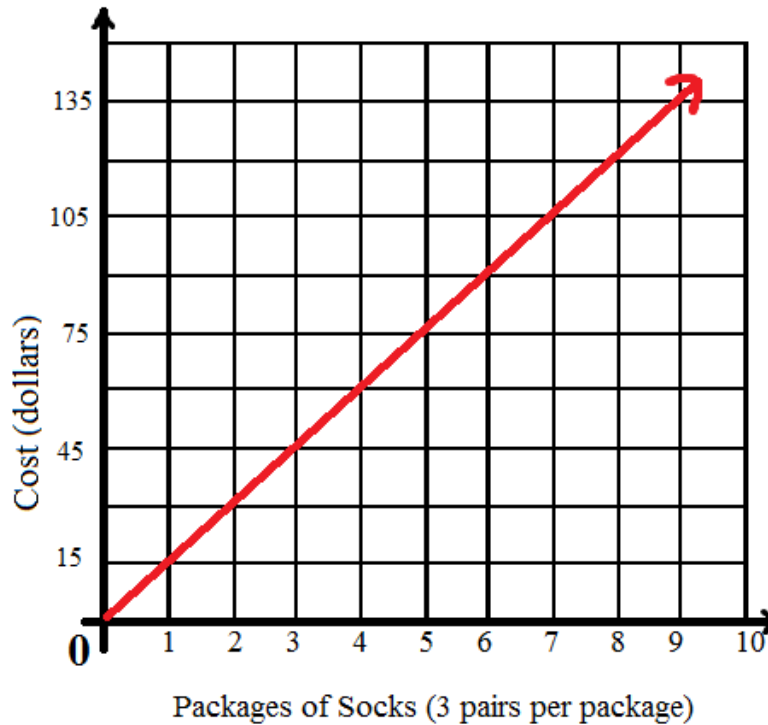
2. When you are instructed to compare proportional relationships represented in different ways, what aspect of the relationships are you comparing? What must you do in order to make the comparison?

To compare proportional relationships, you must compare the rates of change. *Slope or unit rate are also acceptable answers.* In order to correctly make the comparison, you find the rate of change for each presentation and then see which of the rates is greater.

3. Coach Nadine is stocking up on Swoosh! brand athletic socks for her team.

a. This graph represents the price Coach Nadine would spend on the socks at store A:

**Prices for Packages of Swoosh! Socks**

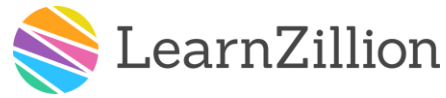


- b. Store B sells a 2-pair package of the same socks for \$12.50.
- c. Store C only sells those socks in bags of 5 pairs; it has this table in its advertisement:

<b>Bags of Socks</b>	1	2	3	4	5
<b>Price</b>	\$27.50	\$55.00	\$82.50	\$110.00	\$137.50

- d. At store D,  $y = 4.95x$  ( $x$  = number of pairs of socks purchased and  $y$  = total cost in dollars).

List the stores in the order of their prices for each pair of Swoosh! socks from least to most expensive. If Coach Nadine wants to buy 6 pairs of socks for each of her 15 team players, how much would she spend at each store?



Store A sells a package of 3 socks for \$15, so the cost of each pair is \$5.00. Store B sells 2 pairs for \$12.50, so the cost of each pair is \$6.25. Store C sells 5 pairs for \$27.50, so each pair costs \$5.50. Store D sells each pair for \$4.95. In order of price, the stores are listed **D, A, C, B**.

6 pairs of socks for each of 15 players give a total of 90 pairs of socks.

At store A the cost would be  $90 \times \$5$ , or \$450.00.

At store B the cost would be  $90 \times \$6.25$ , or \$562.50.

At store C the cost would be  $90 \times \$5.50$ , or \$495.00.

At store D the cost would be  $90 \times 4.95$ , or \$445.50.