

Goal:

● Review



1. Cross out the *ratio* that is NOT equal to the others.

$\frac{3.5}{1}$	$\frac{7}{2}$	$\frac{10.5}{3}$	$\frac{9}{4}$
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Solve each *proportion*.

2. $\frac{3}{2} = \frac{9}{x}$

3. $\frac{x}{3} = \frac{16}{12}$

4. $\frac{x}{2} = \frac{5}{7}$

5. $\frac{2}{9} = \frac{x}{18}$

6. If a shirt cost \$18, how does the total cost relate to the number of shirts you buy?

Vocabulary

- a. direct variation:
- b. constant of variation:



Problem 1 Identifying Direct Variation From Tables

Got It? For the table at the right, determine whether y varies directly with x . If so, what are the constant of variation and the function rule?

x	3	2	1
y	-21	-14	-7

Practice: For each function, determine whether y varies directly with x . If so, find the constant of variation and write the function rule. To start, write ratios of output to input.

A.

x	y
-4	-8
1	2
3	6

B.

x	y
2	6
5	10
10	30



Problem 2 Identifying Direct Variation From Equations

Got It? For the function $5x + 3y = 0$, determine whether y varies directly with x . If so, what is the constant of variation?

12. Solve the equation for y .

Practice: Determine whether y varies directly with x . If so, find the constant of variation.

C. $y = \frac{4}{9}x$

D. $y - 3x = 1$

E. $y + 4x = 0$

F. $y = 3x$



Problem 3 Using a Proportion to Solve a Direct Variation

Shadows and height vary directly at any given time of day. If a 6-foot man casts a shadow 4 feet long, how tall is a flag pole if its shadow is 22 feet long?

Practice: y varies directly with x .

G. If $y = 3$ when $x = -9$, find x when $y = 5$.

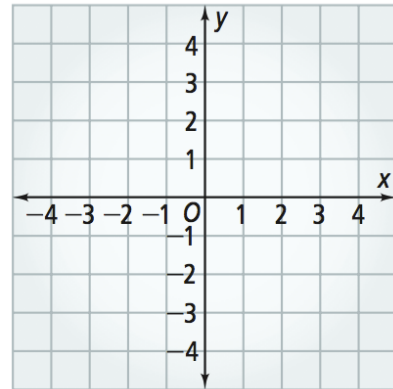
H. If $y = -14$ when $x = -7$, find x when $y = 22$.



Problem 4 Graphing Direct Variation Equations

Got It? What is the graph of the direct variation equation $y = -\frac{2}{3}x$?

x	-3	0	3
y			



Practice: Make a table of x - and y -values and use it to graph the direct variation equation.

I. $y = \frac{1}{5}x$

J. $y = 8x$



Algebra 2
2-2 Direct Variation

A#3

- K.** A new hybrid car has a 12-gallon gas tank. On one tank of gas, the owner can drive 540 miles. The number of miles traveled varies directly with the number of gallons of gas the car uses.
- Write an equation that relates the number of miles traveled with the number of gallons of gas used.
 - How many miles can the owner travel on 9 gallons of gas?

- L.** On a certain calling plan, a 15-minute long-distance phone call costs \$.90. The cost varies directly with the length of the call. Write an equation that relates the cost to the length of the call. How long is a call that costs \$1.32?

M.

Write *direct variation* if the graph is a direct variation. Write *linear* if the graph is a linear function that is not a direct variation.

