

# DIRECT VARIATION

A Direct Variation is a specific relationship in which there is a constant \_\_\_\_\_ between all ordered pairs.

Direct Variation Equations are written in the form

finding The  
CONSTANT (k)

Identify the constant of the ordered pairs below.  
Then, write the equation to represent the relationship.

1)  $\{(1, 4), (2, 8), (3, 12), (4, 16)\}$

2)  $\{(-6, 3), (-4, 2), (0, 0), (2, -1)\}$

3)

x	y
-12	-8
-6	-4
0	0
3	2

4)

x	-4	-1	3	5
y	12	3	-9	-15

identifying  
equations

Identify the equations below that represent a direct variation.  
If yes, identify the constant of variation.

5)  $y = 3x$

6)  $y = -\frac{4}{5}x$

7)  $y = 2$

8)  $y = 5x$

9)  $y = x - 4$

10)  $y = -x$

11)  $y = -\frac{4}{5}x$

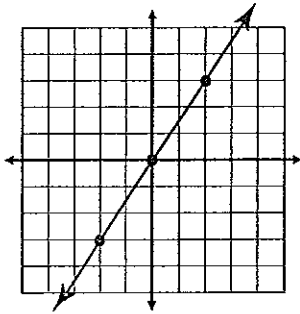
12)  $y = 2x - 8$

13)  $y = -3x + 6$

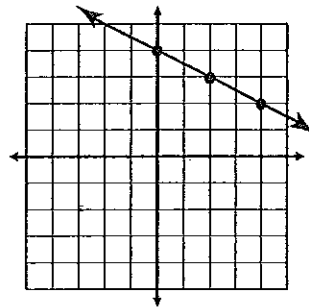
# Identifying graphs

Identify the graphs below that represent a direct variation.  
If yes, identify the constant of variation. (K)

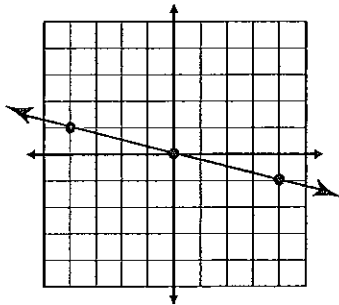
14)



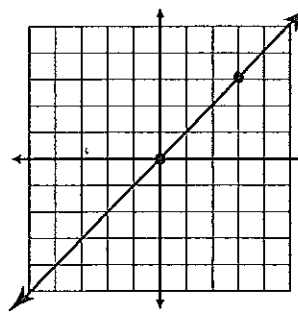
15)



16)



17)



# finding missing values

If the following ordered pairs represent a direct variation, find the missing value.

Example:

$$(3, -9) \text{ and } (x, -27)$$

$$\frac{3}{-9} = \frac{x}{-27} \quad -9x = -81$$

$$|x=9|$$

18) (2, -4) and (-6, y)

19) (4, 16) and (x, 24)

20) (12, y) and (4, 7)

21) (x, -16) and (6, 24)

22) If  $y = -18$  when  $x = 3$ , find  $x$  when  $y = 30$

23) If  $y = 80$  when  $x = 32$ , find  $x$  when  $y = 100$

24) If  $y = 10$  when  $x = -4$ , find  $y$  when  $x = 12$

25) If  $y = -7$  when  $x = -28$ , find  $y$  when  $x = 20$