

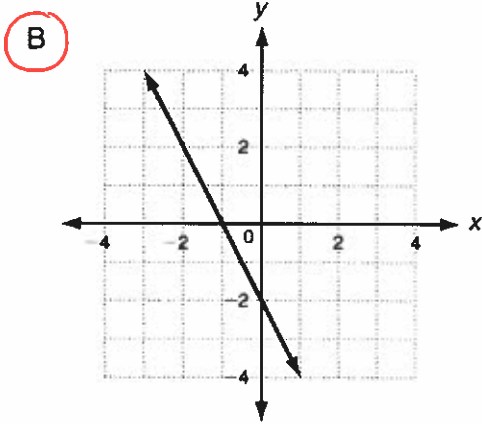
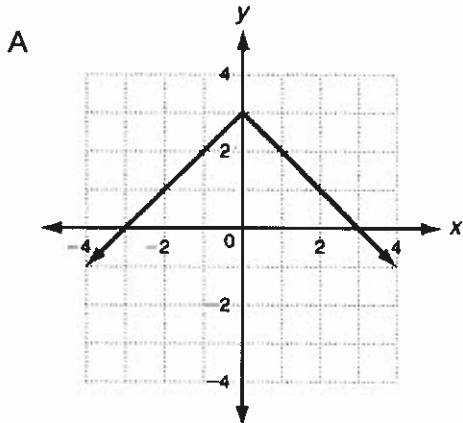


# Linear Functions

## REVIEW

Select the best answer.

1. Which graph represents a linear function?



2. A car travels at 30 mi/h. The function  $f(x) = 30x$  gives the distance the car travels in  $x$  hours. What is the **domain** of this function? \*think if this should be discrete or continuous

$x \geq 0$   
any # greater than or equal to zero

3. Find the x-intercept of the equation  $7x + 3y = 21$ .

$$7x + 3(0) = 21$$

$$\frac{7x}{7} = \frac{21}{7}$$

**(3, 0)**

$$x = 3$$

4. The table shows the price of a video game for different years since the game was released. Find the rate of change during each time interval and determine during which time interval did the price decrease at the greatest rate?

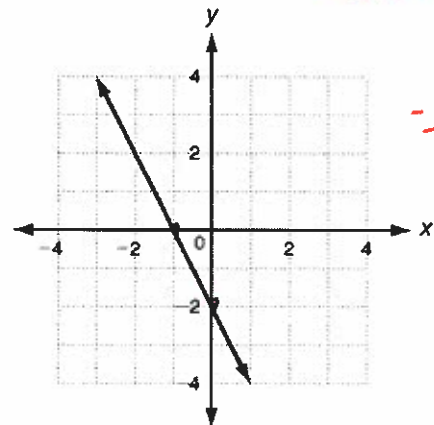
Year	2000	2002	2003	2005	2007
Price (\$)	50	57	52	55	43

Handwritten calculations for rate of change:

$\frac{7}{2}$ ,  $\frac{-5}{1}$ ,  $\frac{3}{2}$ ,  $\frac{-12}{2}$

**2005-2007**

5. The slope of this line is -2.



$$-\frac{2}{1} = -2$$

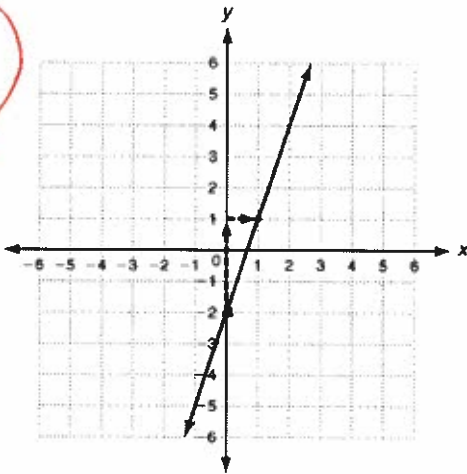
6. Find the slope of the line that contains the points  $(-5, 7)$  and  $(5, 2)$ .

$x_1, y_1$       $x_2, y_2$       $m = \frac{y_2 - y_1}{x_2 - x_1}$

$$\frac{2 - 7}{5 - (-5)} = \frac{-5}{10} = \left(-\frac{1}{2}\right)$$

7. What is the slope and y-intercept of the graph?

$m = \frac{3}{1}$   
 $(0, -2)$



8. Write an equation that in slope-intercept form that describes the line with a slope of  $\frac{3}{4}$  that contains the point (4, -2)?

$y - (-2) = \frac{3}{4}(x - 4)$   
 $y + 2 = \frac{3}{4}x - 3$   
 $y = \frac{3}{4}x - 5$

9. Which equation describes the line with a slope of -2 and y-intercept of 10?

$y = -2x + 10$

10. Is this relationship a direct variation?

$y = 4x + 3$

A yes

**B no**

11. Find the x- and y-intercepts of

$5x - 2y = 20$ . Write the answers as points.

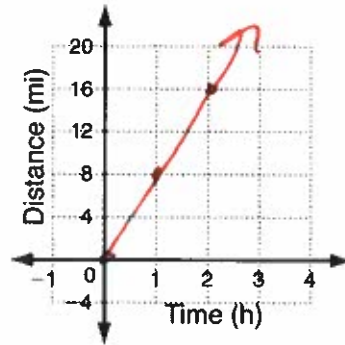
$5x - 2(0) = 20$   
 $5x = 20$   
 $x = 4$

x-intercept:  $(4, 0)$

y-intercept:  $(0, -10)$

$5(0) - 2y = 20$   
 $-2y = 20$   
 $y = -10$

12. A jogger runs 8 mi/h. The  $f(x) = 8x$  gives the distance the jogger travels in x hours. Graph this function.



Give its domain and range.

Domain:  $x \geq 0$

Range:  $y \geq 0$

13. Tell whether the slope of this line is positive, negative, zero, or undefined.

positive

