1   The owner of a gas station has $4400 to spend on unleaded gas this month. Regular unleaded costs him $0.60 per gallon, and premium unleaded costs $0.80 per gallon. Write an equation that relates the amount of regular unleaded gasoline, x, the owner can buy and the amount of premium unleaded, y. (Your equation will have the form $ax + by = c$.).

2   Annelise is on vacation at a seaside resort. She can rent a bicycle from her hotel for $2 an hour, plus a $4 insurance fee. (A fraction of an hour is charged as the corresponding fraction of $2.) The equation for the cost of the rental, C, in terms of the number of hours, t, is

$$C = 4 + 2t$$

How much will it cost Annelise to rent a bicycle for 3 hours? Check your answer using the graph.
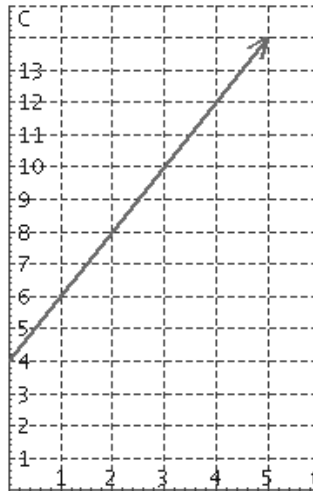
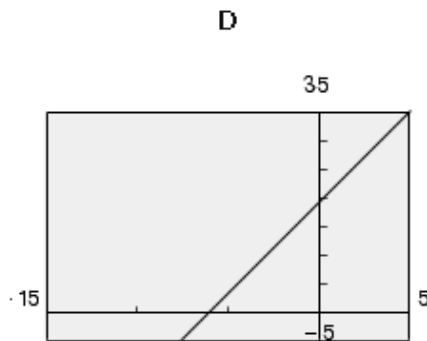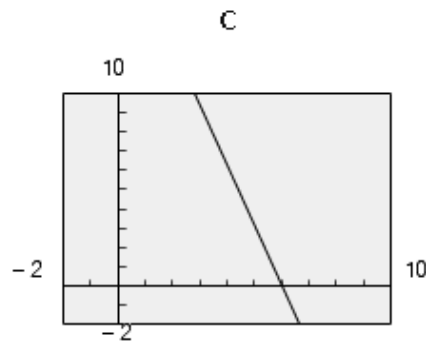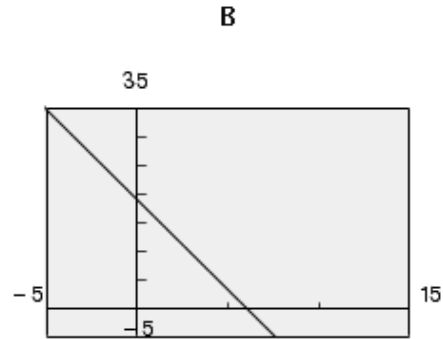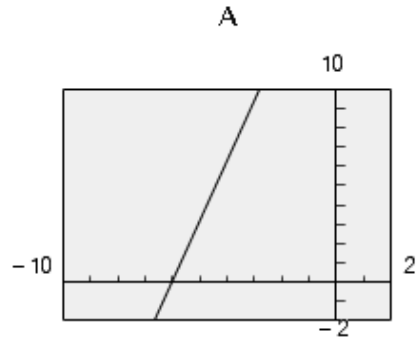**3** Choose an appropriate window and graph the equation.

$$\frac{x}{6} + \frac{y}{19} = 1$$

Choose the letter that corresponds to the correct graph.

A

B

C

D

4 Use a graphing calculator to solve the inequality

$$542 - 19x \geq 181$$

Set the | WINDOW | to

Xmin = − 40 Xmax = 54
Ymin = − 100 Ymax = 900

5 Find the $x-$ and $y-$ intercepts for the following equation.

$$x + y = 50$$

a. $(0 , - 50) , (- 50 , 0)$ c. $(0 , - 50) , (50 , 0)$

b. $(0 , 50) , (50 , 0)$ d. $(0 , 50) , (- 50 , 0)$

6 Graph the following equation on your calculator with the ZInteger setting. (Press $\boxed{\textbf{ZOOM}}$ $\boxed{\textbf{6}}$, and then

$\boxed{\textbf{ZOOM}}$ $\boxed{\textbf{8}}$ $\boxed{\textbf{ENTER}}$.) Use the graph to answer the question. Use the equation to verify your answers.

$$y = 6.7 - 1.1x$$

For what value of x is $y \geq 0.1$?

  a. $x \leq 6$ b. $x \geq 8$ c. $x \leq 8$ d. $x \geq 6$

7 Figure shows the amount of water W remaining (in liters) in a southern California household t days after an earthquake.

Choose two points and compute the slope.
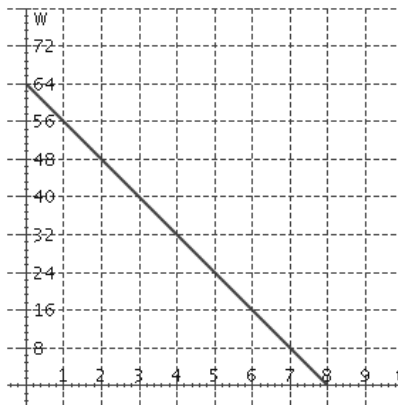
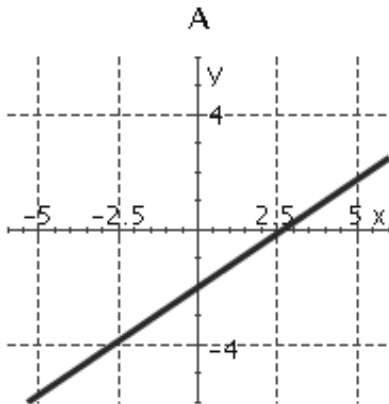**8** A line has slope $\dfrac{5}{2}$. Find the horizontal change associated with the vertical change $\Delta y = 10$ along the line. Use the

equation $m = \dfrac{\Delta y}{\Delta x}$.

  a. $\Delta x = 24$ b. $\Delta x = 10$ c. $\Delta x = 4$ d. $\Delta x = 20$

9 Write an equation for the line in slope − intercept form if the line passes through the point $(2, -4)$ and has a slope $m = -7$.

10 One of the graphs below is the graph of the equation

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

Select the correct graph.

A

B

C

D
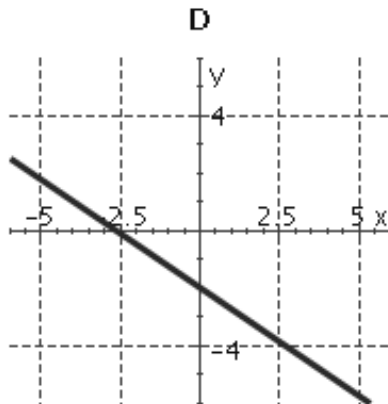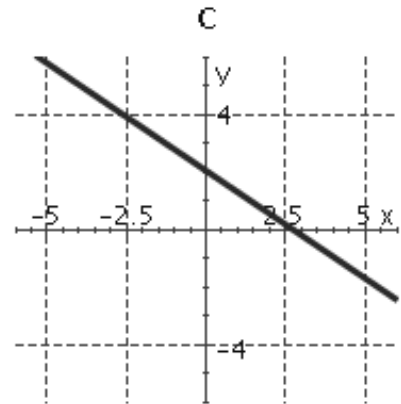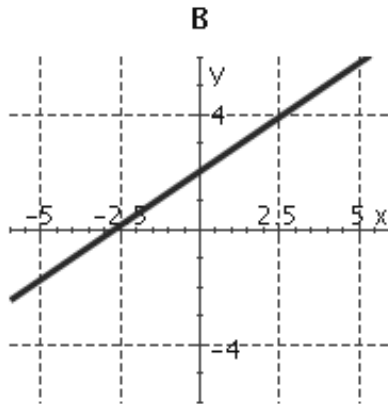
11 Write the equation in slope – intercept form. State the slope and $y-$ intercept of the line.

$$0.3x + 0.002y = 0.12$$

Select the correct answer, where m is the slope and b is the $y-$ intercept of the line.

a. $y = -150x + 60$, $m = -150$, $b = 60$

b. $y = 0.3x - 0.12$, $m = 150x$, $b = -0.12$

c. $y = 0.12x - 0.002$, $m = 0.12$, $b = 0.00024$

d. $y = -\frac{0.3}{2}x + 0.12$, $m = -0.3$, $b = 0.12$

12 Determine whether the two lines
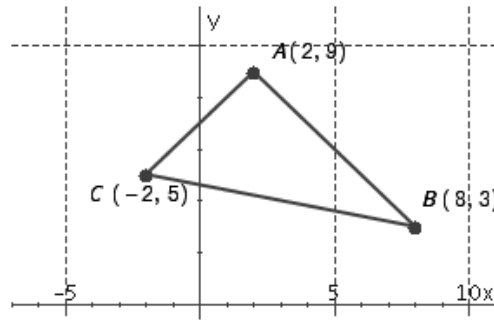
$$y \;=\; 3x \;+\; 8 \;\; \text{and} \;\; y \;=\; \frac{1}{3}x \;-\; 8$$

are parallel, perpendicular, or neither.

13 Is the triangle with vertices $A\,(2,\;9)$, $B\,(8,\;3)$, and $C\,(-2,\;5)$ a right triangle?

14 State the slope of the line.

$$y \;=\; 9$$

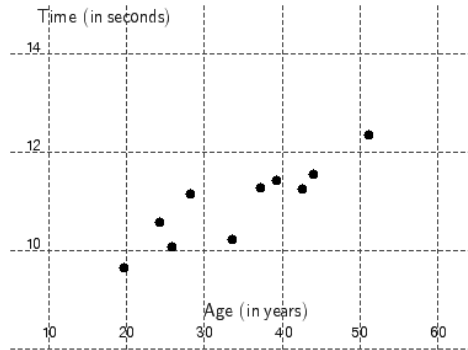a. $m = 9$ b. $m = -9$ c. $m = 0$ d. m is undefined

15 The scatterplot in the figure below shows the ages of ten army drill sergeants and the time it took each to run 100 meters, in seconds.

What was the hundred $-$ meter time for the $25-$ year $-$ old drill sergeant?
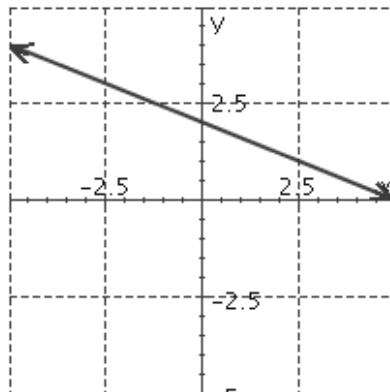
Choose the answer from the list:

(A)   8 seconds
(B)   13 seconds
(C)   10 seconds
(D)   15 seconds

16 Use the least squares regression line for the following data to predict the value of *y* when *x* = 9.

$$(10, 12) , (11, 14) , (12, 14) , (12, 16) , (16, 20)$$

17 Determine whether the slope of the line is positive, negative, zero, or undefined.

18 Find an equation for the line that passes through the point $(5,\ 1)$ and is perpendicular to the line

$$10x \ - \ 5y \ = \ 9$$

Please give your answer as an equation in slope $-$ intercept form.

19 The slopes of several lines are given below. What line is perpendicular to the graph of

$$y = 4.5x + 7$$

a. $m = \dfrac{36}{8}$ b. $m = \dfrac{20}{90}$ c. $m = -\dfrac{8}{36}$ d. $m = -\dfrac{90}{20}$

20 The vertices of the triangle ABC are

$$A\ (-5, 2)\ ,\ B\ (-5, 7)\ \text{and}\ C\ (5, 8)$$

Find the slope of the altitude from point B to side $\overline{AC}$.

a. $-\dfrac{5}{3}$ b. $\dfrac{5}{3}$ c. $\dfrac{3}{5}$ d. $-\dfrac{3}{5}$

R Ch1

---

1. 0.60*x+
0.80*y=4400

2. 10

3. B

4. x <= 19

5. b

6. a

7. m=
$-$ 8

8. c

9. y=$-$ 7*x+10

10. C

11. a

12. neither

13. yes

14. c

15. C

16. y =
11.076923073

17. negative

18. y=frac($-$ 1,2)*
x+frac(7,2)

19. c

20. a