Test #1 Review Questions

Notes:

1. *Answers, with limited or no work, can be found on the last page.*
2. *Links to video solutions to these questions can be found in the Test #1 Review Page in Canvas.*
3. *The questions are numbered according to the corresponding questions in the Chapter 1 and Chapter 3 (Miller) Tests at the end of each chapter in the eText.*

Chapter 1 Questions

Ch1 Test #1

Translate to an algebraic expression: *Four less than the product of two numbers*. (Hint: Let *m* and *n* represent the real numbers)

Ch1 Test #2

Evaluate $a^3 - 5b + b \div ac$ for a = -2, b = 6, and c = 3.

Ch1 Test #6

Perform the indicated operation: $29.5 - 43.7$

Ch1 Test #8

Perform the indicated operation: $-\frac{7}{6} - \left(-\frac{5}{4}\right)$

Ch1 Test #11

Perform the indicated operation: $\frac{2}{5} \div \left(-\frac{3}{10}\right)$

Ch1 Test #12

Simplify $7 + (1 - 3)^2 - 9 \div 2^2 \cdot 6$

Ch1 Test #15

Solve $10x - 7 = 38x + 49$

Ch1 Test #16

Solve $13t - (5 - 2t) = 5(3t - 1)$

Ch1 Test #17

Solve for *p:* $2p = sp + t$

Ch1 Test #18

Linda's scores on five tests are 84, 80 76 96 and 80. What must Linda score on the sixth test so that her average will be 85?

Ch1 Test #21

Simplify $6b - [7 - 2(9b - 1)]$

Ch1 Test #22

Simplify $(7x^{-4}y^{-7})(-6x^{-6}y)$

Ch1 Test #23

Simplify. *Do not use negative exponents in the answer.* -6^{-2}

Ch1 Test #25

Simplify. *Do not use negative exponents in the answer.* $\left(\frac{2x^3y^{-6}}{-4y^{-2}}\right)^{-2}$

Ch1 Test #26

Simplify. *Do not use negative exponents in the answer.* $(7x^3y)^0$

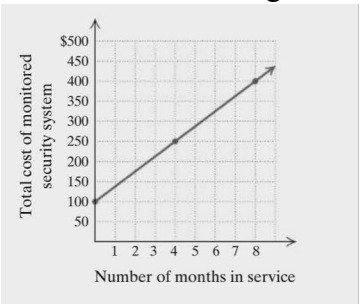
Chapter 2 Questions

Ch2 Test #2

Graph $y = x^2 + 3$

Ch2 Test #3

Find the rate of change for the following graph. Use appropriate units.



Ch2 Test #4

Find the slope of the line containing the following points: (-2, -2) and (6, 3)

Ch2 Test #5

Find the slope of the line containing the following points: (-3.1, 5.2) and (-4.4, 5.2)

Ch2 Test #7

Find the slope and the y-intercept: $-5y - 2x = 7$

Ch2 Test #8

Find the slope: $f(x) = -3$

Ch2 Test #9

Find the slope: $x - 5 = 11$

Ch2 Test #10

Find the intercepts of the line given by $5x - y = 15$

Ch2 Test #11

Graph $f(x) = -3x + 4$

Ch2 Test #12

Graph $y - 1 = -\frac{1}{2}(x + 4)$

Ch2 Test #13

Graph $-2x + 5y = 20$

Ch2 Test #14

Graph $3 - x = 9$

Ch2 Test #16

The average SAT math score is 500 for students with an income of $60,000 and 530 for students with a family income of $,100,000. Draw a graph and estimate the average SAT math score for students with a family income of $75,000.

Ch2 Test #18

Determine without graphing whether the graphs of the equations are parallel, perpendicular, or neither.

$$4y + 2 = 3x$$
$$-3x + 4y = -12$$

Ch2 Test #19

Determine without graphing whether the graphs of the equations are parallel, perpendicular, or neither.

$$y = -2x + 5$$
$$2y - x = 6$$

Ch2 Test #20

Find a linear function that has slope -5 and y-intercept $(0, -1)$ → $(0, b)$

$y = mx + b \Rightarrow f(x) = -5x - 1$

$f(x)$

Ch2 Test #21

Find an equation in point-slope form of the line with slope 4 and containing (-2, -4)

$y + 4 = 4(x + 2)$

Incorrect

$y + 4 = 4x + 2.$

Ch2 Test #22

Using function notation, write a slope-intercept equation for the line containing (3, -1) and (4, -2)

$(y - (-1)) = m(x - 3)$, $m = \frac{-2-(-1)}{4-3} = \frac{-2+1}{1} = -1$

$y + 1 = -1(x - 3) \Rightarrow y + 1 = -x + 3 \Rightarrow y = -x + 3 - 1 \Rightarrow y = -x + 2$

Ch2 Test #23

Find an equation of the line containing (-3, 2) and parallel to the line $2x - 5y = 8$

$f(x) = -x + 2$

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

Ch2 Test #24

Find an equation of the line containing (-3, 2) and perpendicular to the line $2x - 5y = 8$

Let slope be m. $m \times \frac{2}{5} = -1$

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

$m = -\frac{5}{2}$

$-5y = -2x + 8$

$y = \frac{2}{5}x - \frac{8}{5}$ ← $y = \frac{-2}{-5}x + \frac{8}{-5}$

Ch2 Test #25

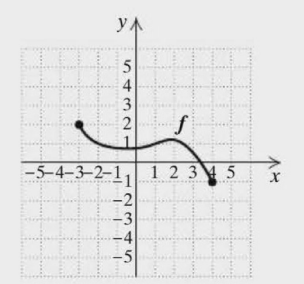
If you rent a truck for one day and drive it 250 mi, the cost is $100. If you rent it for one day and drive it 300 mi the cost is $115. Let *C(m)* represent the cost in dollars, of driving *m* miles.

a) Find a linear function that fits the data.

b) Use the function to determine how much it will cost to rent the truck for one day and drive it 500 mi.

Ch2 Test #26

For the following graph of f determine
(a) f(-2)
(b) the domain off
(c) any x-value for which f(x) = 1
(d) the range off



Ch2 Test #27

Given $g(x) = \frac{1}{x}$ and $h(x) = 2x + 1$, find $h(-5)$

Ch2 Test #28

Given $g(x) = \frac{1}{x}$ and $h(x) = 2x + 1$, find $(g + h)(x)$

$(g+h)(x) = g(x)+h(x) = \frac{1}{x} + 2x+1$

$(g \cdot h)(2) = g(2) \cdot h(2) = \frac{1}{2} \cdot (2 \times 2+1) = \frac{1}{2} \cdot 5 = \frac{5}{2}$

$(g/h)(1) = \frac{g(1)}{h(1)} = \frac{1}{2 \times 1+1} = \frac{1}{2+1} = \frac{1}{3}$

Find the domain of g/h.

$Dg = \{x \mid x \text{ is a real number and } x \neq 0\}$

$Dh = \{x \mid x \text{ is a real number}\}$

$D(g/h) = \{x \mid x \text{ is a real number and } x \neq 0 \text{ and } x \neq \frac{-1}{2}\}$

$h(x) \neq 0 \Rightarrow 2x+1 \neq 0 \Rightarrow 2x \neq -1 \Rightarrow x \neq \frac{-1}{2}$

Chapter 3 Questions

Ch3 Test #1

Solve graphically

$2x + y = 8$
$y - x = 2$

Ch3 Test #2

Solve using the substitution method

$x + 3y = -8$
$4x - 3y = 23$

Ch3 Test #4

Solve using the elimination method

$4y + 2x = 18$
$3x + 6y = 26$

Ch3 Test #5

Solve using any appropriate method

$2x - 4y = -6$
$x = 2y - 3$

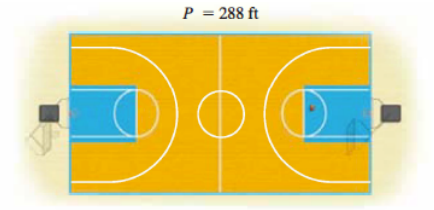
Ch3 Test #6

Solve using any appropriate method

$4x - 6y = 3$
$6x - 4y = -3$

Ch3 Test #7

The perimeter of a standard basketball court is 288 ft. The length is 44 ft longer than the width. Find the dimensions.



Ch3 Test #8

Pepperidge Farm® Goldfish is a snack food for which 40% of its calories come from fat. Rold Gold® Pretzels receive 9% of their calories from fat. How many grams of each would be needed to make 620 g of a snack mix for which 15% of the calories are from fat?

Ch3 Test #20

Find the equilibrium point for the demand and supply functions D(p) = 79 - 8p and S(p) = 37 + 6p, where p is the price, in dollars, D(p) is the number of units demanded, and S(p) is the number of units supplied.

Ch3 Test #21

Kick Back, Inc., is producing a new hammock. For the first year, the fixed costs for setting up produc-tion are $44,000. The variable costs for producing each hammock are $25. The revenue from each hammock is $80.

Find the following.

a) The total cost C(x) of producing x hammocks

b) The total revenue R(x) from the sale of x hammocks

c) The total profit P(x) from the production and sale of x hammocks

d) The profit or loss from the production and sale of 300 hammocks; of 900 hammocks

e) The break-even point