

HW-6

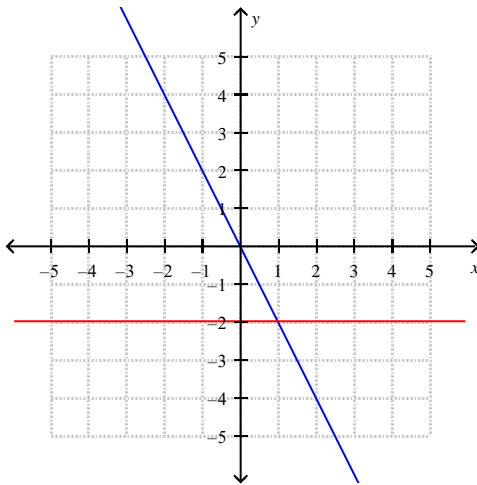
Multiple Choice

Identify the choice that best completes the statement or answers the question.

_____ 1. Use an algebraic method to determine for which, if any, system $(6, -2)$ is a solution.

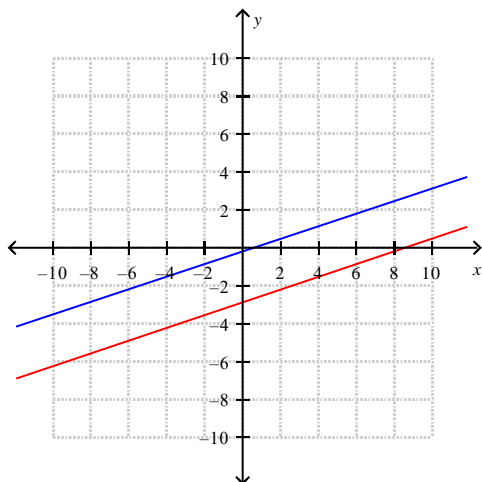
- a. $-x - 4y = 2$
 $x + y = 4$
- b. $-x - 4y = 2$
 $x - y = 4$
- c. $x + 4y = 2$
 $x + y = 4$
- d. $x - 4y = 2$
 $x - y = 8$
- e. none of these

_____ 2. The graph represents the system of equations $2x + y = 0$ and $y = -2$. Solve the system by graphing.



- a. $(-2, 1)$
- b. $(2, -1)$
- c. $(1, -2)$
- d. $(-1, 2)$
- e. no solution

_____ 3. The graph represents the system of equations $x - 3y = 1$ and $x - 3y = 9$. Solve the system by graphing.



- a. $(0, -3)$
- b. $(-3, 0)$
- c. $\left(-1, -\frac{1}{3}\right)$
- d. $(-1, 0)$
- e. no solution

___ 4. Solve the system of equations $y = \frac{1}{2}x - 2$ and $y = 3x - 2$ by graphing.

- a. $(0, 2)$
- b. $(0, -2)$
- c. $(-2, 0)$
- d. infinitely many solutions
- e. no solution

For next problem, solve the system of equations by substitution.

___ 5. $y = -x + 5$

$$y = \frac{1}{5}x - 1$$

- a. $(-1, 5)$
- b. $(0, -5)$
- c. $(5, 0)$
- d. infinitely many solutions
- e. no solution

For next problems, use elimination to solve the system of equations.

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

- a. $(1, 3)$
- b. $(-1, 3)$
- c. $(8, 3)$
- d. infinitely many solutions
- e. no solution

For next problems, solve the system using any method.

___ 7. $12x + 35y = 0$
 $-15x + 14y = 0$

- a. $(0, 0)$
- b. $\left(\frac{15}{14}, 1\right)$
- c. $\left(-\frac{35}{12}, 1\right)$
- d. infinitely many solutions
- e. no solution

___ 8. $y = -5x + 1$
 $-10x - 2y = -4$

- a. $(2, -4)$
- b. $(-2, 10)$
- c. $\left(\frac{2}{5}, -1\right)$
- d. infinitely many solutions
- e. no solution

___ 9. $3x + 2y = 0$
 $6x + 2y = 5$

- a. $\left(\frac{5}{3}, \frac{5}{2}\right)$
- b. $\left(\frac{5}{3}, -\frac{5}{2}\right)$

c. $\left(\frac{5}{3}, -\frac{5}{2} \right)$

- d. infinitely many solutions
e. no solution

- _____ 10. Suppose that you receive an inheritance of \$48,000. You decide to invest some of the money in stocks and some in certificates of deposit (CDs). Because the CDs are a less risky investment you want to put 3 times as much into CDs as stocks. How much are you going to invest in each type of account?
- a. \$12,000 in stocks
\$36,000 in CDs
b. \$36,000 in stocks
\$12,000 in CDs
c. \$16,000 in stocks
\$32,000 in CDs
d. \$32,000 in stocks
\$16,000 in CDs
e. none of these
- _____ 11. A metallurgist has an alloy with 12% titanium and an alloy with 44% titanium. He needs 100 grams of an alloy with 20% titanium. How much of each alloy should be mixed to obtain the 100 grams of alloy with 20% titanium?
- a. 25 grams of 12% alloy
75 grams of 44% alloy
b. 65 grams of 12% alloy
35 grams of 44% alloy
c. 75 grams of 12% alloy
25 grams of 44% alloy
d. 35 grams of 12% alloy
65 grams of 44% alloy
e. none of these
- _____ 12. The owner of a coffee shop is making a special blend of coffee that combines Ethiopian beans that sell for \$13 per pound and Guatemalan beans that sell for \$5 per pound. She wants to have a total of 54 pounds of the special blend, and she is selling it for \$7 per pound. How many pounds of each type of bean should she combine?
- a. 40.5 lbs of Ethiopian
13.5 lbs of Guatemalan
b. 42 lbs of Ethiopian
12 lbs of Guatemalan
c. 13.5 lbs of Ethiopian
40.5 lbs of Guatemalan
d. 12 lbs of Ethiopian
42 lbs of Guatemalan
e. none of these

- _____ 13. One cell phone plan charges \$35.99 per month, including 400 minutes of out-of-network calls each month. Each additional minute outside the network costs \$0.25. Another plan charges \$59.99 per month, including 1000 minutes of out-of-network calls per month. This plan charges \$0.40 for each additional minute out of the network. Find the number of total minutes outside the network a customer must use for the plans to cost the same in a month.
- 1840
 - 1400
 - 1000
 - 400
 - none of these

- _____ 14. Miley is shifting her credit card debt. She has a total of \$2292 in debt, and she wants three times as much debt on her Visa as on her Master Card. How much debt will she have on each credit card?
- \$573 on Visa
\$1719 on Master Card
 - \$1719 on Visa
\$573 on Master Card
 - \$764 on Visa
\$1528 on Master Card
 - \$1528 on Visa
\$764 on Master Card
 - none of these

- _____ 15. Use an algebraic method to determine which of the ordered triples is a solution to the system.

$$5x - 6y + 6z = 57$$

$$x - 5y - 6z = -6$$

$$7x - y + z = 28$$

- $(-3, -3, -4)$
- $(-3, -3, 4)$
- $(3, -3, -4)$
- $(3, -3, 4)$
- none of these

- _____ 16. Use constant multiples of only the top equation to eliminate the variable x from the system of equations. Which system of two equations results?

$$-x + 6y + 4z = -4$$

$$2x + y - 2z = -11$$

$$3x - 4y - z = 4$$

- $14y + 11z = 0$
 $13y + 6z = -19$

- b. $14y + 11z = -8$
 $13y + 6z = -19$
- c. $14y + 11z = -8$
 $13y - 6z = -8$
- d. $19y + 11z = -8$
 $8y + 6z = -19$
- e. none of these

____ 17. Use constant multiples of only the top equation to eliminate the variable z from the system of equations. Which system of two equations results?

$$3x - 2y - z = 3$$

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

$$-x + 9y + 2z = -3$$

- a. $7x - 7y = 21$
 $-5x + 5y = 3$
- b. $7x - 7y = 21$
 $5x + 5y = 3$
- c. $-7x + 7y = 21$
 $5x + 5y = 0$
- d. $-7x + 7y = 21$
 $5x - 5y = -3$
- e. none of these

For problems 6-12 solve the system of equations using elimination, if possible, and express the solution as an ordered triple.

____ 18. $x + y + z = 6$
 $-2x + y + 4z = 0$
 $-x + 2y + 5z = 5$

- a. $(3, 2, 1)$
- b. $(1, 2, 3)$
- c. $(0, 0, 0)$
- d. infinitely many solutions
- e. no solution

____ 19. Nancy just inherited \$83,000. She decides to diversify her investment by putting the money into three different accounts: tax-free bonds which pay 5% annual interest, a certificate of deposit which pays 7% annual interest, and a mutual stock fund which has an average annual rate of return of 12%. The amount she invests in the certificate of deposit is double the amount she invests in bonds. Her goal for total return per year from these three investments is \$7720. How much should Nancy put into each account?

- a. \$43,000 in bonds
\$28,000 in a certificate
\$12,000 in a mutual fund
- b. \$12,000 in bonds
\$43,000 in a certificate
\$83,000 in a mutual fund
- c. \$12,000 in bonds
\$28,000 in a certificate
\$43,000 in a mutual fund
- d. \$28,000 in bonds
\$12,000 in a certificate
\$43,000 in a mutual fund
- e. none of these

- _____ 20. Morgan is keeping track of her calcium intake from three sources for three days. The first day she had a glass of milk, a serving of cottage cheese and 1 calcium supplement pill totaling 1090 mg of calcium. The second day she had 2 glasses of milk, 1 serving of cottage cheese, and 1 calcium supplement totaling 1450 mg of calcium. The third day she had 1 glass of milk, 2 servings of cottage cheese, and 1 calcium supplement totaling 1310 mg of calcium. Find the amount of calcium in each of the three sources.
- a. 220 mg in the supplement
510 mg a serving of milk
360 mg in a serving of cottage cheese
 - b. 510 mg in the supplement
360 mg a serving of milk
220 mg in a serving of cottage cheese
 - c. 360 mg in the supplement
220 mg a serving of milk
510 mg in a serving of cottage cheese
 - d. 220 mg in the supplement
220 mg a serving of milk
220 mg in a serving of cottage cheese
 - e. none of these

