

Name _____

To receive full credit for the assignment you must attach extra sheets of paper to the packet and show your work (write the steps to arrive at each answer).

Classify the system as consistent or inconsistent, and dependent or independent.

1) $x + 4y = 30$ 1) _____
 $2x - 2y = 0$

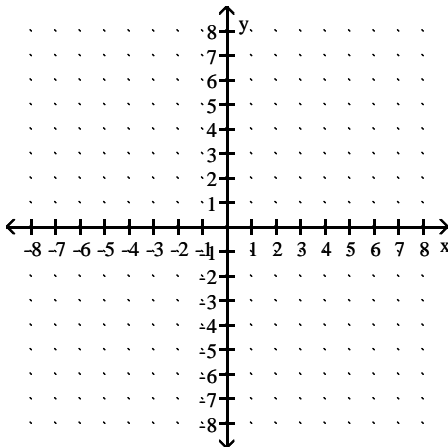
- A) Consistent and dependent B) Consistent and independent
C) Inconsistent and independent D) Inconsistent and dependent

2) $3x + 2y = 1$ 2) _____
 $9x + 6y = 3$

- A) Consistent and dependent B) Inconsistent and independent
C) Consistent and independent D) Inconsistent and dependent

Solve graphically.

3) $4x + y = -3$ 3) _____
 $5x + 4y = 10$



- A) (-2, 5) B) (0, -3) C) (2, 5) D) (-2, -3)

Solve by the substitution method.

4) $6x + 9y = 12$
 $-4x - 3y = 10$

4) _____

- A) (-7, 6) B) No solution C) (-8, 7) D) (-7, 7)

5) $x + y = -8$
 $x + y = 4$

5) _____

- A) No solution B) (-8, 4) C) (0, 0) D) (0, -4)

6) $x + 5y = -14$
 $-3x + 4y = -34$

6) _____

- A) (5, -3) B) (-6, -3) C) No solution D) (6, -4)

Solve using the substitution method.

7) $y = 2x - 5$
 $4x + y = 7$

7) _____

- A) (-1, 11) B) (2, -1) C) (-1, 2) D) (1, -3)

Solve the problem.

8) The sum of two numbers is 39 and their difference is 7. Find the numbers.

8) _____

- A) 18 and 25 B) 33 and 6 C) 23 and 16 D) 21 and 18

9) The perimeter of a rectangle is 30 cm. One side is 9 cm longer than the other side. Find the lengths of the sides.

9) _____

- A) 6 cm, 15 cm B) 3 cm, 9 cm C) 3 cm, 12 cm D) 8 cm, 17 cm

Solve the system of equations by the elimination method.

10) $9x + 6y = 42$
 $-7x + 2y = 14$

10) _____

- A) (0, 8) B) (0, 7) C) (-1, 8) D) no solution

11) $\frac{3}{2}x - \frac{1}{3}y = -18$

11) _____

$\frac{3}{4}x + \frac{2}{9}y = -9$

- A) (0, -12) B) (12, 0) C) (0, 12) D) (-12, 0)

- 12) $5x - 2y = -6$ 12) _____
 $15x - 6y = 18$
 A) (-30, 12) B) (30, -12)
 C) no solution D) infinitely many solutions

Solve using the elimination method.

- 13) $-x - 7y = -29$ 13) _____
 $7x + 7y = 35$
 A) (-4, 1) B) (2, 3) C) (1, 4) D) No solution

- 14) $x - 2y = 14$ 14) _____
 $2x - 2y = 16$
 A) No solution B) (3, 2) C) (-2, -7) D) (2, -6)

Solve the problem using the elimination method.

- 15) There were 27,000 people at a ball game in Los Angeles. The day's receipts were \$198,000. How many people paid \$14 for reserved seats and how many paid \$5 for general admission? 15) _____
 A) 15,750 paid \$14 and 11,250 paid \$5 B) 7000 paid \$14 and 20,000 paid \$5
 C) 11,250 paid \$14 and 15,750 paid \$5 D) 20,000 paid \$14 and 7000 paid \$5

- 16) The sum of two numbers is 6. Four times the larger number plus two times the smaller number is 54. Find the numbers. 16) _____
 A) 15 and -21 B) 27 and -21 C) 15 and -9 D) 21 and -15

- 17) Best Rentals charges a daily fee plus a mileage fee for renting its cars. Barney was charged \$96 for 3 days and 300 miles, while Mary was charged \$168 for 5 days and 600 miles. What does Best Rental charge per day and per mile? 17) _____
 A) \$8 per day and 24¢ per mile B) \$25 per day and 9¢ per mile
 C) \$24 per day and 8¢ per mile D) \$23 per day and 9¢ per mile

Solve the problem.

- 18) Ellen wishes to mix candy worth \$1.10 per pound with candy worth \$2.57 per pound to form 28 pounds of a mixture worth \$2.04 per pound. How many pounds of the more expensive candy should she use? 18) _____
 A) 10 pounds B) 23 pounds C) 18 pounds D) 12 pounds

- 19) Anne and Nancy use a metal alloy that is 21.2% copper to make jewelry. How many ounces of a 20% alloy must be mixed with a 26% alloy to form 100 ounces of the desired alloy? 19) _____
- A) 25 ounces B) 80 ounces C) 20 ounces D) 82 ounces

Solve.

- 20) John and Tony start from GraysLake at the same time and head for a town 10 miles away. John walks twice as fast as Tony and arrives 3 hours before Tony. Find how fast each walks. 20) _____
- A) Tony's speed = 3 m/h and John's = 6 m/h.
- B) Tony's speed = $\frac{3}{5}$ m/h and John's = $\frac{6}{5}$ m/h.
- C) Tony's speed = $\frac{5}{3}$ m/h and John's = $\frac{10}{3}$ m/h.
- D) Cannot be determined with information given

- 21) An airplane travels 400 miles against the wind in 4 hours, and makes the return trip with the same wind in 1 hours. Find the rate of the wind. 21) _____
- A) 400 mph B) 250 mph C) 100 mph D) 150 mph

- 22) $x + y + z = 6$
 $x - z = -2$
 $y + 3z = 11$ 22) _____
- A) no solution B) (1, 2, 3) C) (-1, 2, -3) D) (0, 1, 2)

- 23) $5x + 2y + z = -11$
 $2x - 3y - z = 17$
 $7x + y + 2z = -4$ 23) _____
- A) (3, 0, -4) B) (0, 6, -1) C) (0, -6, 1) D) (-3, 0, 4)

- 24) Some people must eat a low-sodium diet with no more than 2000 mg of sodium per day. By eating 1 cracker, 1 pretzel, and 1 cookie, a person would ingest 149 mg of sodium. If a person ate 8 pretzels and 8 cookies, he or she would ingest 936 mg of sodium. By eating 6 crackers and 7 pretzels, the person would take in 535 mg of sodium. Find the amount of sodium in each. Which of the following is true? 24) _____
- A) A pretzel has 49 mg of sodium. B) A cookie has 71 mg of sodium.
- C) A cracker has 30 mg of sodium. D) None of these

- 25) A \$128,000 trust is to be invested in bonds paying 7%, CDs paying 5%, and mortgages paying 9%. The sum of the bond and CD investment must equal the mortgage investment. To earn an \$ 9280 annual income from the investments, how much should the bank invest in bonds? 25) _____
- A) \$48,000 B) \$16,000 C) \$64,000 D) \$14,000

- 26) A company makes 3 types of cable. Cable A requires 3 black, 3 white, and 2 red wires. B requires 1 black, 2 white, and 1 red. C requires 2 black, 1 white, and 2 red. They used 100 black, 110 white and 85 red wires. How many of each cable were made? 26) _____
- | | | | |
|---------------|---------------|---------------|---------------|
| A) 15 cable A | B) 15 cable A | C) 15 cable A | D) 15 cable A |
| 98 cable B | 25 cable B | 15 cable B | 25 cable B |
| 15 cable C | 88 cable C | 25 cable C | 15 cable C |

Solve by the substitution method.

- 27) $x + y = 7$
 $4x + 4y = 28$ 27) _____

Solve the problem.

- 28) Find two numbers whose sum is 33 and whose difference is 11. 28) _____

Solve.

- 29) $x + y + z = 6$
 $x - y + 5z = 16$
 $3x + y + z = 16$ 29) _____

Answer Key

Testname: 11FALL_BCCM203_CH3_PROBSTST

- 1) B
- 2) A
- 3) A
- 4) A
- 5) A
- 6) D
- 7) B
- 8) C
- 9) C
- 10) B
- 11) D
- 12) C
- 13) C
- 14) D
- 15) B
- 16) D
- 17) C
- 18) C
- 19) B
- 20) C
- 21) D
- 22) B
- 23) C
- 24) A
- 25) B
- 26) D
- 27) Infinite number of solutions
- 28) 11 and 22
- 29) (5, -1, 2)