

Name _____

Solve the system by the substitution method. If there is no solution or an infinite number of solutions, so state.

1) $x + y = -4$
 $y = -3x$

2) $y = 2x + 3$
 $2x + y = 15$

3) $x + 7y = -20$
 $8x + 6y = 40$

4) $x + 7y = 49$
 $-4x + 8y = 56$

5) $x + 3y = -2$
 $2x + 4y = -4$

6) $-7x - 7y = -14$
 $4x - 3y = -48$

7) $8x + 8y = -32$
 $3x + 5y = -20$

8) $9x + 8y = -36$
 $-4x - 6y = 16$

9) $\frac{1}{5}x + \frac{1}{5}y = -2$
 $x - y = -4$

10) $x + y = -6$
 $x - y = 16$

11) $y = 4x - 8$
 $y = 9x - 7$

12) $y = 1.3x - 4.4$
 $y = 0.8x + 0.5$

13) $x - 5 = y$
 $y + 2 = x$

14) $2x + y = 10$
 $6x + 3y = 30$

15) $-5x - 20y = -8$
 $4x + 16y = 0$

16) $y - 6x = 2$
 $6y = 36x + 12$

17) $x = -y$
 $x + y = 6$

18) $x + y = -9$
 $y = 2x$

19) $x - 2y = 20$
 $9x - 3y = 90$

23) One number is 1 less than a second number.
Twice the second number is 7 more than 3 times the first. Find the two numbers.

24) One number is 2 less than a second number.
Twice the second number is 34 more than 5 times the first. Find the two numbers.

25) A vendor sells hot dogs and bags of potato chips. A customer buys 3 hot dogs and 2 bags of potato chips for \$9.50. Another customer buys 2 hot dogs and 2 bags of potato chips for \$7.00. Find the cost of each item.

26) A vendor sells hot dogs and bags of potato chips. A customer buys 3 hot dogs and 4 bags of potato chips for \$13.75. Another customer buys 4 hot dogs and 5 bags of potato chips for \$17.75. Find the cost of each item.

Solve the problem.

20) One number is 1 less than a second number.
Twice the second number is 22 less than 5 times the first. Find the two numbers.

21) One number is 3 less than a second number.
Twice the second number is 4 less than 3 times the first. Find the two numbers.

22) One number is 3 less than a second number.
Twice the second number is 5 less than 3 times the first. Find the two numbers.

27) A tour group split into two groups when waiting in line for food at a fast food counter. The first group bought 8 slices of pizza and 4 soft drinks for \$37.36. The second group bought 6 slices of pizza and 7 soft drinks for \$35.86. How much does one slice of pizza cost?

28) A tour group split into two groups when waiting in line for food at a fast food counter. The first group bought 8 slices of pizza and 7 soft drinks for \$37.04. The second group bought 6 slices of pizza and 4 soft drinks for \$25.98. How much does one slice of pizza cost?

Answer Key

Testname: 05.2V02

- 1) $\{(2, -6)\}$
- 2) $\{(3, 9)\}$
- 3) $\{(8, -4)\}$
- 4) $\{(0, 7)\}$
- 5) $\{(-2, 0)\}$
- 6) $\{(-6, 8)\}$
- 7) $\{(0, -4)\}$
- 8) $\{(-4, 0)\}$
- 9) $\{(-7, -3)\}$
- 10) $\{(5, -11)\}$
- 11) $\left\{-\frac{1}{5}, -\frac{44}{5}\right\}$
- 12) $\{(9.8, 8.34)\}$
- 13) no solution; \emptyset
- 14) infinite number of solutions; $\{(x, y) \mid 2x + y = 10\}$ or $\{(x, y) \mid 6x + 3y = 30\}$
- 15) no solution; \emptyset
- 16) infinite number of solutions; $\{(x, y) \mid y - 6x = 2\}$ or $\{(x, y) \mid 6y = 36x + 12\}$
- 17) no solution; \emptyset
- 18) $\{(-3, -6)\}$
- 19) $\{(8, -6)\}$
- 20) 8 and 9
- 21) 10 and 13
- 22) 11 and 14
- 23) -5 and -4
- 24) -10 and -8
- 25) \$2.50 for a hot dog; \$1.00 for a bag of potato chips
- 26) \$2.25 for a hot dog; \$1.75 for a bag of potato chips
- 27) \$3.69 per slice of pizza
- 28) \$3.37 per slice of pizza