Practice System of Linear Equations Date:_____ Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether the ordered pair is a solution of the system of linear equations.

1) $\begin{cases} x + y = 0 \\ x - y = 12 \end{cases}$; (6, –6) 1) _____

A) Yes B) No

2) $\begin{cases} 3x = -13 - y \\ 2x = -18 - 3y \end{cases}$; (3, –4) 2) _____

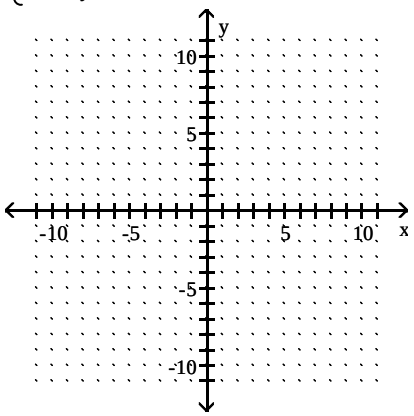
A) Yes B) No

3) $\begin{cases} 3x - 1 = -1 - y \\ -9x + 3y = -6 \end{cases}$; $\left(\frac{1}{3}, -1\right)$ 3) _____

A) Yes B) No

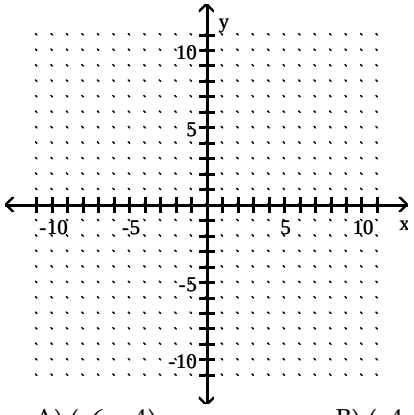
Solve the system of equations by graphing.

4) $\begin{cases} x + y = 11 \\ x - 4y = -14 \end{cases}$ 4) _____



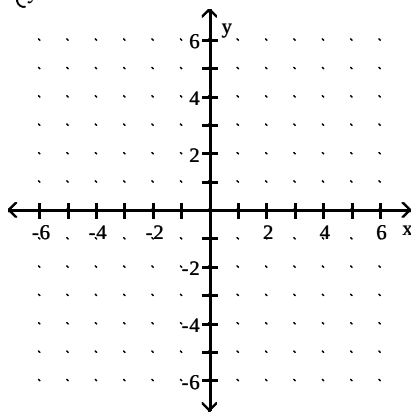
A) (6, –5) B) (5, 6) C) (5, –6) D) (6, 5)

5) $\begin{cases} 2x + y = -16 \\ x - 3y = 6 \end{cases}$ 5) _____



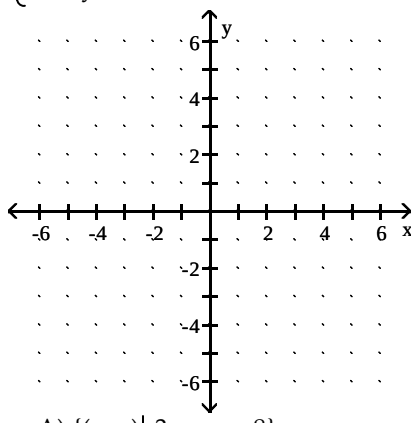
A) (–6, –4) B) (–4, 6) C) (–4, –6) D) (–6, 4)

6) $\begin{cases} x = -y \\ y + x = 6 \end{cases}$ 6) _____



A) (1, 5) B) {(x, y)| x = −y} C) ∅ D) (1, 1)

7) $\begin{cases} 3x + y = 8 \\ 3x + y = 14 \end{cases}$ 7) _____



A) {(x, y)| 3x + y = 8} B) (4, 5)
C) (6, 2) D) ∅

Solve the system of equations using substitution.

8) $\begin{cases} x + y = -4 \\ y = -3x \end{cases}$ 8) _____

A) (2, 6) B) (–2, –6) C) (–2, 6) D) (2, –6)

9) $\begin{cases} 3x - 1y = 7 \\ x = -2y \end{cases}$ 9) _____

A) (2, –1) B) (–1, 2) C) (–2, –1) D) (2, 1)

10) $\begin{cases} x + 6y = 11 \\ 8x + 5y = 2 \end{cases}$ 10) _____

A) (–1, 2) B) (–2, 3) C) ∅ D) (1, 3)

11) $\begin{cases} x - 3y = -21 \\ 8x - 2y = -14 \end{cases}$ 11) _____

A) ∅ B) (1, 6) C) (–7, 0) D) (0, 7)

12) $\begin{cases} x - 4y = -6 \\ 2x - 3y = -12 \end{cases}$ 12) _____

A) (–5, –6) B) (6, –1) C) (–6, 0) D) ∅

Solve the system of equations using elimination.

13) $\begin{cases} 2x + 5y = -18 \\ -2x - 10y = 38 \end{cases}$ 13) _____

A) (–2, – 4) B) (2, 4) C) (1, –4) D) (–1, 4)

14) $\begin{cases} x + 4y = -19 \\ 8x + 3y = -7 \end{cases}$ 14) _____

A) (–1, –4) B) (1, –5) C) ∅ D) (0, –4)

15) $\begin{cases} 5x + 4y = 34 \\ 2x + 4y = 40 \end{cases}$ 15) _____

A) (4, –11) B) (5, –11) C) (–2, 11) D) ∅

16) $\begin{cases} x - 3y = 0 \\ -6x - 3y = -21 \end{cases}$ 16) _____

A) (3, 1) B) ∅ C) (1, 3) D) (–1, 3)

Solve the system of equations using either substitution or elimination.

17) $\begin{cases} \frac{1}{5}x + \frac{1}{5}y = 1 \\ x - y = -3 \end{cases}$ 17) _____

A) (1, 4) B) ∅ C) (–1, 5) D) (0, 5)

18) $\begin{cases} \frac{1}{3}x + \frac{1}{3}y = 1 \\ \frac{1}{5}x - \frac{1}{5}y = -1 \end{cases}$ 18) _____

A) (–2, 5) B) ∅ C) (–1, 4) D) (1, 5)

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

19) $x + 4y = 30$ 19) _____
$2x - 2y = 0$

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

20) $x + 6y = 39$ 20) _____
$2x + 12y = 78$

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

21) $x + y = -15$ 21) _____
$x - y = 1$

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

22) $x + y = 9$ 22) _____
$2x - 2y = 9$

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

Tell how many solutions the system has. Do not actually solve.

23) $2x - y = 5$
$-4x + 2y = -18$ 23) _____

A) One solution B) No solution C) Infinitely many

24) $3x = y + 3$
$6x - 2y = 3$ 24) _____

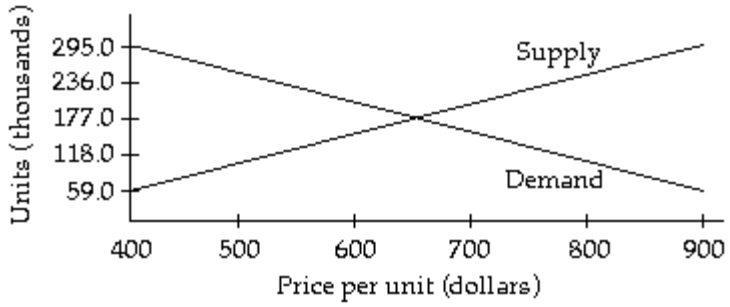
A) One solution B) Infinitely many C) No solution

25) $x + 2y = 0$
$y = -\frac{1}{2}x$ 25) _____

A) One solution B) Infinitely many C) No solution

Solve the problem.

26) The graphs below represent the supply and demand for a product at various prices per unit. At approximately what price does supply equal demand? 26) _____



A) $400 B) $650 C) $177 D) $900

27) A company manufactures three products. The graph shows the production from 1986 to 1996. What was the approximate level of production when the production of B equaled the production of C? 27) _____

A) 700,000 B) 800,000 C) 400,000 D) 500,000

Solve the system of equations.

28) $\frac{5}{y} + \frac{6}{x} = -\frac{13}{10}$
$\frac{7}{y} + \frac{7}{x} = -\frac{21}{10}$ 28) _____

A) $\left\{\left(\frac{1}{5}, -\frac{1}{2}\right)\right\}$ B) {(5, 2)} C) {(5, –2)} D) ∅

Solve the problem.

29) The perimeter of a triangle is 75 cm. The triangle is isosceles now, but if its base were lengthened by 2 cm and each leg were shortened by 7 cm, it would be equilateral. Find the length of the base of the original triangle. 29) _____

A) 21 cm B) 18 cm C) 28 cm D) 19 cm

30) The perimeter of a triangle is 73 cm. The triangle is isosceles now, but if its base were lengthened by 5 cm and each leg were shortened by 3 cm, it would be equilateral. Find the length of the base of the original triangle. 30) _____

A) 27 cm B) 18 cm C) 24 cm D) 19 cm

31) A flat rectangular piece of aluminum has a perimeter of 60 inches. The length is 6 inches longer than the width. Find the width. 31) _____

A) 24 inches B) 30 inches C) 12 inches D) 18 inches

32) A merchant has coffee worth $60 a pound that she wishes to mix with 80 pounds of coffee worth $ 90 a pound to get a mixture that is worth $80 a pound. How many pounds (lb) of the $60 coffee should be used? 32) _____

A) 40 lb B) 20 lb C) 120 lb D) 60 lb

33) A chemist needs 130 milliliters of a 62% solution but has only 44% and 70% solutions available. Find how many milliliters of each that should be mixed to get the desired solution. 33) _____

A) 90 mL of 44%; 40 mL of 70% B) 45 mL of 44%; 85 mL of 70%

C) 45 mL of 44%; 90 mL of 70% D) 40 mL of 44%; 90 mL of 70%

Answer Key
Testname: PPLSYSEQ

1) A
2) B
3) A
4) D
5) A
6) C
7) D
8) D
9) A
10) A
11) D
12) C
13) C
14) B
15) C
16) A
17) A
18) C
19) D
20) C
21) B
22) A
23) B
24) C
25) B
26) B
27) A
28) C
29) D
30) D
31) C
32) A
33) D