Testbank for Quiz #7 on McKeague 3.1 to 3.5

1 Solve the following system
   \[ 3x + 5y = 21 \]
   \[ 12x + 20y = 84 \]
   a. There is one solution pair \((x,y) = (4,3)\)
   b. There is one solution pair \((x,y) = (4,6)\)
   c. There is one solution pair \((x,y) = (2,3)\)
   d. The system is inconsistent
   e. The system is dependent

2 Solve the following system by the addition method.
   \[ 3x - 2y = -13 \]
   \[ 5x + 4y = -18 \]
   a. \((-4, \frac{1}{2})\)
   b. \((-8, \frac{1}{4})\)
   c. \((4, 2)\)
   d. The system is inconsistent
   e. The system is dependent

3 Solve the following system by the addition method.
   \[ \frac{1}{4}x - \frac{1}{7}y = 1 \]
   \[ -\frac{1}{5}x + \frac{1}{6}y = 3 \]
   a. The system has one solution pair \((x,y)\) satisfying \(x + y = 73\)
   b. The system has one solution pair \((x,y)\) satisfying \(x + y = 70\)
   c. The system has one solution pair \((x,y)\) satisfying \(x + y = 76\)
   d. The system is inconsistent
   e. The system is dependent

4 Solve the following system by the substitution method.
   \[ 5x - y = 7 \]
   \[ 20x - 4y = 28 \]
   a. \((7, 7)\)
   b. \((20, 4)\)
   c. \((4, 20)\)
   d. The system is inconsistent
   e. The system is dependent
5 Solve the system.
\[4x - 9y = 3\]
\[7x + 2y = -3\]
a. There is one solution pair \((x, y) = \left( \frac{33}{71}, \frac{21}{71} \right)\)
b. There is one solution pair \((x, y) = \left( -\frac{21}{71}, -\frac{33}{71} \right)\)
c. There is one solution pair \((x, y) = \left( \frac{21}{71}, \frac{33}{71} \right)\)
d. The system is inconsistent

e. The system is dependent

6 Solve the system.
\[x + y + z = 4\]
\[x - y + 3z = 2\]
\[x - y - 5z = -6\]
a. \((3, -2, 3)\)  b. \((-1, 4, 5)\)
c. \((5, 4, 1)\)  d. \((1, 2, 1)\)
e. The system is inconsistent  f. The system is dependent

7 Solve the system.
\[6x + y - 7z = -44\]
\[x - 2y + 3z = 22\]
\[9x + 3y + z = 0\]
a. \((1, -3, 4)\)  b. \((0, -2, 6)\)
c. \((1, -3, 9)\)  d. \((-1, -4, 7)\)
e. The system is inconsistent  f. The system is dependent

8 Solve the system.
\[\frac{1}{3}x - y + z = 0\]
\[2x + \frac{1}{4}y + z = 5\]
\[x + y + z = -4\]
a. \((6, 5, -6)\)  b. \((8, -4, -6)\)
c. \((6, -4, -6)\)  d. The system is dependent
e. The system is inconsistent

9 Find the value of the determinant.
\[
\begin{vmatrix}
3 & 1 & 2 \\
1 & 3 & 2 \\
2 & 2 & 2 \\
\end{vmatrix}
\]
a. 0  b. -3  c. 2
d. 1  e. None of the above.
10 Find the value of the $2 \times 2$ determinant.
\[
\begin{vmatrix}
-1 & 2 \\
3 & -6
\end{vmatrix}
\]
- a. 0
- b. 2
- c. 1
- d. -3
- e. None of the above.

11 The difference of two numbers is 1. Twice the smaller is 7 more than the larger. Find the SUM of the two numbers.
- a. 18
- b. 19
- c. 20
- d. 17
- e. None of the above

12 Bob has 20 coins totaling $1.45. If he has only dimes and nickels, how many of each coin does he have?
- a. 10 nickels, 10 dimes
- b. 12 nickels, 8 dimes
- c. 11 nickels, 9 dimes
- d. 6 of each

13 A collection of nickels, dimes, and quarters consists of 10 coins with a total value of $1.45. The number of dimes is equal to the number of nickels. Figure out how many of each coin there are.
Choose the answer that gives the number of quarters.
- a. 2 quarters
- b. 3 quarters
- c. 4 quarters
- d. 5 quarters
- e. None of the above

14 Solve the system
\[
\begin{align*}
x + y + z &= 9 \\
2x + 3y + z &= 16 \\
3x + y &= 11
\end{align*}
\]
Then choose the answer that gives the value of $x - y$.
- a. 4
- b. 6
- c. 8
- d. 1
- e. -2

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