

Name: Key

6.3 Practice

1) Solve using matrix equations.

$$\begin{aligned} p - 2q &= 1 \\ p + 5q &= 22 \end{aligned}$$

$$\begin{aligned} p &= 7 \\ q &= 3 \end{aligned}$$

2) Solve using matrix equations.

$$\begin{aligned} 4y &= 7 - 2x \\ 6 &= 3x - 3y \end{aligned}$$

$$\begin{aligned} x &= 2.5 \\ y &= .5 \end{aligned}$$

3) Solve using a graphing calculator:

$$\begin{aligned} 4x - 3z &= -23 \\ -2x - 5y + z &= -9 \\ y - z &= 3 \end{aligned}$$

$$\begin{aligned} x &= -5 \\ y &= 4 \\ z &= 1 \end{aligned}$$

4) Which system of linear equations is represented by the matrix equation: (then solve)

$$\begin{bmatrix} 2 & 5 \\ 7 & -4 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 35 \\ -28 \end{bmatrix}$$

$$\begin{aligned} 2x + 5y &= 35 \\ 7x - 4y &= -28 \end{aligned}$$

- a) $\begin{aligned} 2x + 5y &= 35 \\ 7x - 4y &= -28 \end{aligned}$
 b) $\begin{aligned} 2x + 5x &= 35 \\ 7y - 4y &= -28 \end{aligned}$
 c) $\begin{aligned} 2x + 7y &= 35 \\ 5x - 4y &= -28 \end{aligned}$
 d) $\begin{aligned} 2 + 5x &= 35 \\ 7 - 4y &= -28 \end{aligned}$
 e) none of these

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5) A collection of nickels and quarters amounts to \$2.60. There are 16 coins in all. Utilizing matrices, determine how many there are of each coin.

$$\begin{aligned} N + Q &= 16 \\ 5N + 25Q &= 260 \end{aligned}$$

$$\begin{aligned} N &= 7 \\ Q &= 9 \end{aligned}$$

6) A total value of \$1 bills and \$5 bills in a cash box is \$124. There are 8 more \$5 bills than \$1 bills. Utilizing matrices, determine how many there are of each.

$$\begin{aligned} 1x + 5y &= 124 \\ x + 8 &= y \end{aligned}$$

$$\begin{aligned} x(1 \text{ dollar}) &= 14 \\ y(5 \text{ dollar}) &= 22 \end{aligned}$$

7) Hunter bought a mixture of 20-cent, 35-cent & 50-cent valentines. [The number of 20-cent valentines was 1 more than twice the number of 35-cent valentines, and the number of 50-cent valentines was 2 less than the number of 35-cent ones.] If he spent \$4.20 all together, use matrices to find how many valentines of each kind he bought.

$$20x + 35y + 50z = 420$$

$$\begin{aligned} x &= 2y + 1 \\ z &= y - 2 \end{aligned}$$

$$\begin{aligned} x(20 \text{ cent}) &= 9 \\ y(35 \text{ cent}) &= 4 \\ z(50 \text{ cent}) &= 2 \end{aligned}$$

5) A collection of nickels and quarters amounts to \$2.60. There are 16 coins in all. Utilizing matrices, determine how many there are of each coin.

6) A total value of \$1 bills and \$5 bills in a cash box is \$124. There are 8 more \$5 bills than \$1 bills. Utilizing matrices, determine how many there are of each.

7) Hunter bought a mixture of 20-cent, 35-cent & 50-cent valentines. The number of 20-cent valentines was 1 more than twice the number of 35-cent valentines, and the number of 50-cent valentines was 2 less than the number of 35-cent ones. If he spent \$4.20 all together, use matrices to find how many valentines of each kind he bought.