

Answers

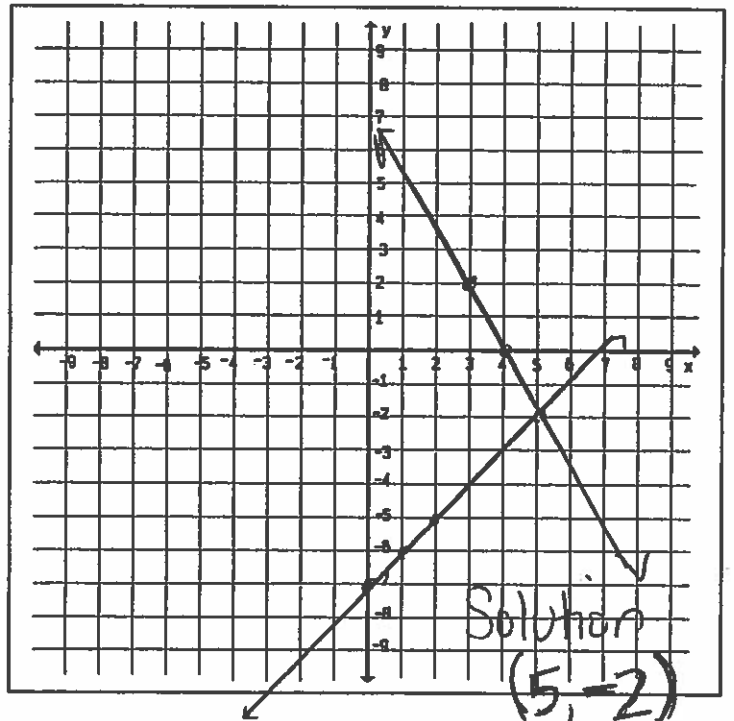
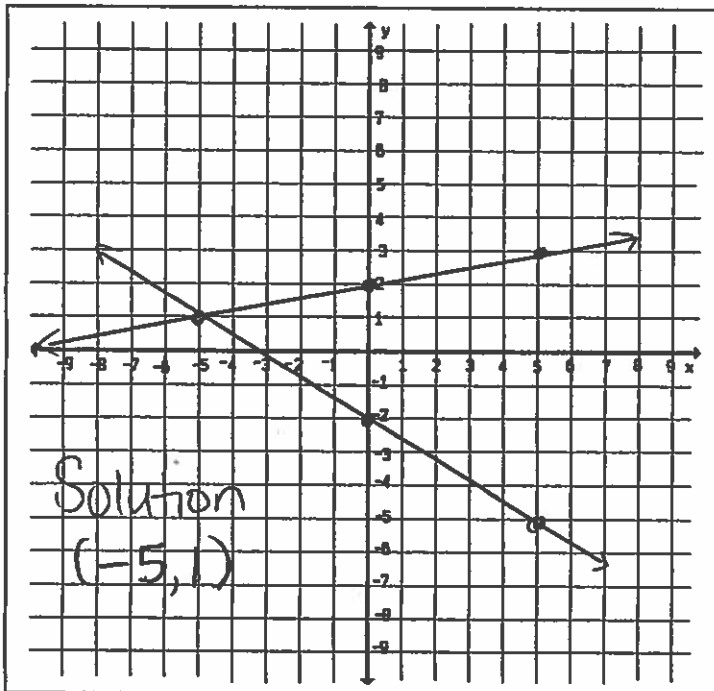
Math 1201 Review Questions

Systems of Equations

1. Solve each linear system by graphing.

a) $y = \frac{1}{5}x + 2$ $m = \frac{1}{5}$ $b = 2$
 $y = -\frac{3}{5}x - 2$ $m = -\frac{3}{5}$ $b = -2$

b) $y = x - 7$ $m = 1$ $b = -7$
 $y - 2 = -2(x - 3)$ $m = -2$ pt $(3, 2)$



2. Solve each linear system algebraically, using elimination or substitution.

a) $\begin{cases} 3(4x - 3y = 11) \\ -4(3x - 5y = -11) \end{cases}$ elimination

$$\begin{array}{r} 12x - 9y = 33 \\ -12x + 20y = 44 \\ \hline 11y = 77 \\ y = 7 \end{array}$$

$$\begin{array}{r} 4x - 3(7) = 11 \\ 4x - 21 = 11 \\ 4x - 21 = 11 \\ 4x = 32 \\ x = 8 \end{array}$$

$(8, 7)$

b) $\begin{cases} x = -2y + 1 \\ 2x - 2y = -10 \end{cases}$ substitution

$$\begin{array}{r} 2(-2y + 1) - 2y = -10 \\ -4y + 2 - 2y = -10 \\ -6y + 2 = -10 \\ -6y = -12 \\ y = 2 \end{array}$$

$$\begin{array}{r} x = -2(2) + 1 \\ x = -4 + 1 \\ x = -3 \end{array}$$

$(-3, 2)$

c) $\begin{cases} 6x + 3y - 27 = 0 \\ y + 2x = 9 \end{cases}$ line up!

$$\begin{array}{r} 6x + 3y = 27 \\ 2(2x + y = 9) \end{array}$$

$$\begin{array}{r} 6x + 3y = 27 \\ -6x - 3y = -27 \\ \hline 0 = 0 \end{array}$$

coincident lines

infinite solutions

d) $\begin{cases} \left(\frac{2}{3}x + \frac{5}{6}y = \frac{1}{2}\right) \cdot 6 \\ \left(\frac{3}{4}x - \frac{1}{2}y = \frac{2}{1}\right) \cdot 4 \end{cases}$ $\begin{cases} -3(4x + 5y = 3) \\ 4(3x - 2y = 8) \end{cases}$

$$\begin{array}{r} -12x - 15y = -9 \\ 12x - 8y = 32 \\ \hline -23y = 23 \\ y = -1 \end{array}$$

$$\begin{array}{r} 3x - 2(-1) = 8 \\ 3x + 2 = 8 \\ 3x = 6 \\ x = 2 \end{array}$$

$(2, -1)$