

Unit #1 Review – Linear Systems

MPM2D

Test Review Questions

- ▶ Pg. 62 – 63 Practice Questions
 - ▶ #1-3,5,7 – 9, 12 - 16
- ▶ Pg. 64 Chapter Self-Test
 - ▶ # 2 - 4, 7 - 9



Solve each system graphically

$$\begin{aligned} \text{a) } x + y &= 2 \quad (1) \\ x &= 2y + 2 \quad (2) \end{aligned}$$

$$\begin{aligned} \text{b) } y - x &= 1 \quad (1) \\ 2x - y &= 1 \quad (2) \end{aligned}$$

$$\begin{aligned} (1) \quad y &= x + 1 \\ m &= 1, \quad b = 1 \end{aligned}$$

$$\begin{aligned} (2) \quad 2x - 1 &= y \\ m &= 2, \quad b = -1 \end{aligned}$$

$$\begin{aligned} (1) \quad x + y &= 2 \\ x \text{ Int. } \quad y &= 0 \end{aligned}$$

$$x = 2$$

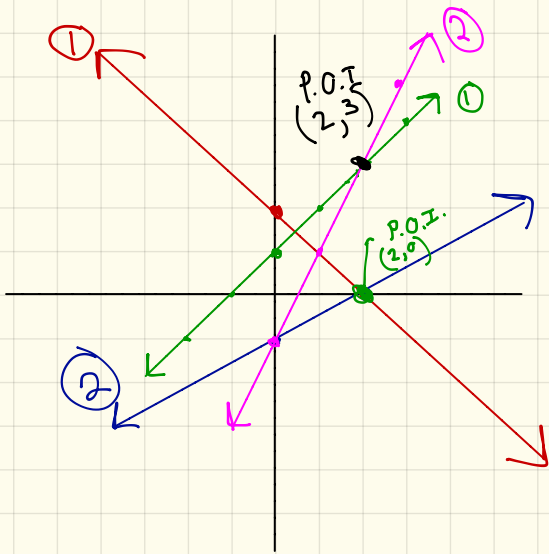
$$\begin{aligned} y \text{ Int. } \quad x &= 0 \\ y &= 2 \end{aligned}$$

$$(2) \quad x = 2y + 2$$

$$x \text{ Int. } \quad y = 0$$

$$x = 2$$

$$\begin{aligned} y \text{ Int. } \quad x &= 0 \\ 0 &= 2y + 2 \\ -2 &= 2y \quad \boxed{y = -1} \end{aligned}$$



More Word Problems pg. 39 #8

8. The difference between two angles in a triangle is 11° . The sum of the same two angles is 77° . Determine the measures of all three angles in the triangle.

Let x represent 1 of the angles
Let y represent the 2nd angle.

①
②
①+②

$$\begin{array}{r} x + y = 77^\circ \\ x - y = 11^\circ \\ \hline 2x = 88^\circ \\ x = 44^\circ \end{array}$$

Sub. $x = 44^\circ$ into ①

$$\begin{array}{r} x + y = 77^\circ \\ 44^\circ + y = 77^\circ \\ y = 77^\circ - 44^\circ \\ y = 33^\circ \end{array}$$



$$\begin{aligned}\therefore \text{3rd angle} &= 180^\circ - (33^\circ + 44^\circ) \\ &= 180^\circ - 77^\circ \\ &= 103^\circ\end{aligned}$$

$$\therefore 33^\circ, 44^\circ, \text{ and } 103^\circ$$

More word problems pg. 27 #6

Austin is creating a new "trail mix" by combining two of his best-selling blends: a pineapple-coconut-macadamia mix that sells for \$18/kg and a banana-papaya-peanut mix that sells for \$10/kg. He is making 80 kg of the new mix and will sell it for \$12.50/kg.

Let p represent kg of pineapple mix

Let b represent kg of banana mix

$$\textcircled{1} \quad p + b = 80$$

$$\textcircled{3} \quad p = 80 - b$$

$$\textcircled{2} \quad 18p + 10b = 12.50(80)$$

$$18p + 10b = 1000$$

Sub ③ into ②

$$\textcircled{3} \quad p = 80 - b$$

$$\textcircled{2} \quad 18p + 10b = 1000$$

$$18(80 - b) + 10b = 1000$$

$$1440 - 18b + 10b = 1000$$

$$1440 - 8b = 1000$$

$$\cancel{1440} - \cancel{1440} - 8b = 1000 - 1440$$

$$-8b = -440$$

$$\frac{-8b}{-8} = \frac{-440}{-8}$$

$$b = 55$$

$$p = 80 - b$$

$$p = 80 - 55$$

$$p = 25$$

\therefore Use 55 kg of banana mix and 25 kg of pineapple mix.