

$$1. \quad n + (n+2) + (n+4) + (n+6) + (n+8) + (n+10) = 2172$$

$$n + n+2 + n+4 + n+6 + n+8 + n+10 = 2172$$

$$6n + 30 = 2172$$

$$6n = 2172 - 30$$

$$6n = 2142 \quad n = 357$$

$$\Rightarrow 357, 359, 361, 363, 365, 367$$

Product of first and 6th integer.

$$\Rightarrow 357 \times 367 = \underline{\underline{131,019}}$$

Question 2.

let 50% $\rightarrow x$

20% $\rightarrow y$.

$$(9)(0.5) + (0.2)(y) = 0.38(9+y)$$

$$4.5 + 0.2y = 3.42 + 0.38y$$

$$4.5 - 3.42 = 0.38y - 0.2y$$

$$1.08 = 0.18y$$

$$\frac{0.18y}{0.18} = \frac{1.08}{0.18}$$

$$y = \underline{\underline{6}}$$

he should use 6L of 20% of acid.

Question 3

let amt from CU $\rightarrow x$

amt from Bank $\rightarrow y$.

there fore:

$$x + y = 4650$$

$$0.045x + 0.08y = 262.10$$

We solve through elimination.

$$\begin{array}{r} x + y = 4650 \quad \times 0.08 \\ 0.045x + 0.08y = 262.10 \quad \times 1 \end{array}$$

$$\Rightarrow 0.08x + 0.08y = 372$$

$$\Rightarrow 0.045x + 0.08y = 262.10$$

$$\Rightarrow 0.08x + 0.08y = 372$$

$$0.045x + 0.08y = 262.10$$

$$0.035x + 0 = 109.9$$

$$\frac{0.035x}{0.035} = \frac{109.9}{0.035}$$

$$x = 3140$$

$$3140 + y = 4650$$

$$y = 4650 - 3140 = \underline{\underline{1510}}$$

Credit union $\Rightarrow \$3140$

Bank $\Rightarrow \$1510$

Question 4.

$$4x + 5y = -7$$

$$3x - 7y = 27$$

Solr. Using Elimination.
Eliminate x .

$$\begin{array}{r} 5(4x + 5y = -7) \\ 4(3x - 7y = 27) \end{array}$$

$$\begin{array}{r} 12x + 15y = -21 \\ -12x - 28y = 108 \\ \hline 0 + 43y = -129 \end{array}$$

$$\frac{+43y = -129}{43 \quad 43}$$

$$y = \underline{\underline{-3}}$$

$$4x + (5(-3)) = -7$$

$$4x - 15 = -7$$

$$4x = -7 + 15$$

$$\frac{4x}{4} = \frac{8}{4} \quad x = \underline{\underline{2}}$$

$$(x, y) = (\underline{\underline{2}}, \underline{\underline{-3}})$$

✓ The system is consistent; it has unique solutions.

✓ The solutions can be obtained graphically and algebraically.

Question 5.

$$21x \geq 31y - 51 \rightarrow y \leq \frac{21}{31}x + \frac{51}{31}$$

$$5x - 17y < 18 \rightarrow y > \frac{5}{17}x + \frac{-18}{17}$$

$$y > \frac{5}{17}x + \frac{-18}{17}$$

$$y \leq \frac{21}{31}x + \frac{51}{31}$$

