

## Elimination

$$1) \begin{cases} 4x - 3y = -22 \\ 2x + 3y = 16 \end{cases} +$$

$$\frac{6x}{6} = \frac{-6}{6}$$

$$\boxed{x = -1}$$

$$4(-1) - 3y = -22$$

$$-4 - 3y = -22$$

$$+4 \qquad +4$$

$$\hline -3y = -18$$

$$\boxed{y = 6}$$

$$2) \begin{cases} 6x - 5y = -8 \\ (4x - 5y = -12) -1 \end{cases}$$

$$-4x + 5y = 12$$

$$\hline 6x - 5y = -8$$

$$2x = 4$$

$$\boxed{x = 2}$$

$$6(2) - 5y = -8$$

$$12 - 5y = -8$$

$$-5y = -20$$

$$\boxed{y = 4}$$

$$3) \begin{cases} 5x - 3y = 23 \\ y = -2x + 7 \end{cases}$$

$$\begin{array}{r} 5x - 3y = 23 \\ (2x + y = 7) \cdot 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6x + 3y = 21 \\ + 5x - 3y = 23 \\ \hline \end{array}$$

$$11x = 44$$

$$\boxed{x = 4}$$

$$5(4) - 3y = 23$$

$$-3y = 3$$

$$\frac{-3}{-3} \quad \boxed{y = -1}$$

4) Levi has a job offer in which he will receive \$800 per month plus a commission of 2% of the total price of the cars he sells. At his current job he receives \$1200 per month plus a commission of 1.5% of his total sales. How much must he sell per month to make the new job a better deal?

5) A youth group went on a trip to an amusement park, travelling in two vans. In the first van, there were 2 adults and 5 children and it cost a total of \$77 to enter the park. In the second van, there were 2 adults and 7 children and it cost \$95. Find the adult price and the student price of admission.

$$\text{VAN 1 : } 2A + 5C = 77$$

$$\text{VAN 2 : } (2A + 7C = 95) - 1$$

$$\begin{array}{r} -2A - 7C = 95 \\ 2A + 5C = 77 \\ \hline \end{array}$$

$$-2C = -18$$

$$C = \$9$$

$$2A + 5(9) = 77$$

$$2A + 45 = 77$$

$$2A = 32$$

$$A = \$16$$