

$$\begin{array}{l|l} \textcircled{1} & x + 2y = 2000 \\ & 4y - 60 = x + 30 \\ & 4y - 60 = 2000 - y + 30 \\ & 5y = 2090 \\ & 2y = 2090/5 \\ & 2y = 418 \\ & \hline x + 418 = 2000 \\ x = 2000 - 418 \\ x = 1582 \end{array}$$

$$\begin{array}{l} \textcircled{1} \quad 3x - 12 = 0 \\ \\ 3x = 12 \\ x = 4 \end{array}$$

$$\begin{array}{l} \textcircled{3} \quad 4(x - 3) - 2 = 1 + 3x \\ 4x - 12 - 2 = 3x + 1 \\ 4x - 14 - 1 = 3x \\ 4x - 15 = 3x \\ 4x - 3x = 15 \\ x = 15 \end{array}$$

$$\begin{array}{l} \textcircled{2} \quad J = \frac{2}{5}A \\ M = \frac{3}{5}(J) \\ J + M + A = 24800 \\ \frac{2A}{5} + \frac{3}{5} \left( \frac{2}{5}A \right) + A = 24800 \\ \frac{2A}{5} + \frac{6}{25}A + A = 24800 \\ 10A + 6A + 25A = 15(24800) \\ 31A = 15(24800) \\ A = 15(8000) \\ A = 12000 \end{array}$$

$J = \frac{2}{5}(12000)$   
 $J = 2(4000)$   
 $J = 8000$

$$\begin{array}{l} 2) \quad 2x - 2 = 3x + 8 \\ 2x - 3x = 10 \\ -x = 10 \\ x = -10 \end{array}$$

$$4) 9x - 8 = 3(x + 2)$$

$$9x - 8 = 3x + 6$$

$$9x - 3x = 6 + 8$$

$$3 \cancel{6}x = 14^{\cancel{7}}$$

$$x = \frac{7}{3}$$

$$5) 4 - 8x = 7 - 6x$$

$$-8x = 7 - 4$$

$$-2x = 3$$

$$x = \frac{-3}{-2}$$

$$6) 3(x - 3) + 2(3x - 1) - 4(x + 1) = 0$$

$$3x - 9 + 6x - 2 - 4x - 4 = 0$$

$$5x - 15 = 0$$

$$5x = 15$$

$$x = 3$$

$$① 6x(7x) = 36 - 2x(2x - 15)$$

$$42x - 6x^2 = 36 - 6x^2 + 30x$$

$$42x = 36 + 30x$$

$$42x - 30x = 36$$

$$12x = 36$$

$$x = 3$$

$$② 4x(x - 7) = 2x(2x - 13) + 10$$

$$4x^2 - 28x = 4x^2 - 26x + 10$$

$$-28x + 26x = 10$$

$$-2x = 10$$

$$x = -5$$

$$③ \frac{x}{2} + \frac{x}{4} = \frac{x-2}{1} - \frac{2}{1}$$

$$\begin{array}{r|l} \text{m.c.m} & \\ 2-4 & 2 \quad \} 4 \\ 2-2 & 2 \quad \} \\ \hline & \end{array}$$

$$2x + x = 4x - 8$$

$$3x = 4x - 8$$

$$8 = 4x - 3x$$

$$8 = x$$

$$\textcircled{4} \frac{9+x}{2} - \frac{8-x}{3} = \frac{x+1}{2} + \frac{x-2}{1}$$

$$3(9+x) - 2(8-x) = 3(x+1) + 6x - 12$$

$$27+3x-16+2x = 3x+3+6x-12$$

$$11+5x = 9x-9$$

$$11+9 = 9x-5x$$

$$20 = 4x$$

$$5 = x$$

$$\textcircled{5} \frac{3}{5}(x+9) + 3(x-11) + \frac{1}{10}(x-11) = \frac{5}{3}(x+2)$$

$$18(x+9) + 3(x-11) = 50(x+2)$$

$$18x + 162 + 3x - 33 = 50x + 100$$

$$21x + 129 = 50x + 100$$

$$29 = 29x$$

$$\boxed{1 = x}$$

$$\textcircled{4} x+x+1+x+2 = 47+x$$

$$2x+3 = 47$$

$$2x = 44$$

$$\boxed{x = 22}$$

$$\therefore \text{Mayor } x+2 = 22+2 = \textcircled{24}$$