

Ex: 13.6

$$1a. (x+5) + (x+3) + x + 2 + 5 + 3 = 44$$

$$4x + 16 = 44$$

$$4x = 44 - 16$$

$$= 28$$

$$x = \frac{28}{4}$$

$$= \underline{\underline{7}}$$

$$d. (5x-10) + (6x+3) + (4x-10) + x + 2 + (5x+3) = 140$$

$$22x - 14 = 140$$

$$22x = 140 + 14$$

$$= 154$$

$$x = \frac{154}{22}$$

$$= \underline{\underline{7}}$$

$$f. 2x + 2x + 2x + 4x = 150$$

$$10x = 150$$

$$x = \frac{150}{10}$$

$$= 15$$

$$= \underline{\underline{15}}$$

$$2a. 3x + 7 = 28$$

$$3x = 28 - 7$$

$$= 21$$

$$x = \frac{21}{3}$$

$$= \underline{\underline{7}}$$

$$d. 2x - 9 = 11$$

$$2x = 11 + 9$$

$$= 20$$

$$x = \frac{20}{2}$$

$$= \underline{\underline{10}}$$

$$\begin{aligned}
 e. \quad 7x - 12 &= 9 \\
 7x &= 9 + 12 \\
 &= 21 \\
 x &= \frac{21}{7} \\
 &= \underline{\underline{3}}
 \end{aligned}$$

$$\begin{aligned}
 3a. \quad 2(2x + 3) &= 22 \\
 2x + 6 &= 22 \\
 2x &= 22 - 6 \\
 &= 16 \\
 x &= \frac{16}{2} = \underline{\underline{8}}
 \end{aligned}$$

$$\begin{aligned}
 c. \quad 5(x - 1) &= 35 \\
 x - 1 &= \frac{35}{5} \\
 &= 7 \\
 x &= 7 + 1 \\
 &= \underline{\underline{8}}
 \end{aligned}$$

$$\begin{aligned}
 e. \quad 4(x + 3) &= 36 \\
 x + 3 &= \frac{36}{4} \\
 &= 9 \\
 x &= 9 - 3 \\
 &= \underline{\underline{6}}
 \end{aligned}$$

$$\begin{aligned}
 4a. \quad \text{Age of Gabriella} &= x \\
 \text{Brother's age} &= x + 8 \\
 \text{Sister's age} &= x - 12 \\
 x + (x + 8) + (x - 12) &= 50 \\
 3x - 4 &= 50 \\
 3x &= 54 \\
 x &= \frac{54}{3} = \underline{\underline{18}}
 \end{aligned}$$

Gabriella's age = 18 years.
 Brother's age = 18 + 8 = 26 yrs.
 Sister's age = 18 - 12 = 6 years

$$\begin{aligned}
 b. \quad x + (x + 54) + (x + 54 + 32) + (x + 54 + 32) &= 866 \\
 4x + 226 &= 866 \\
 4x &= 866 - 226 \\
 &= 640 \\
 x &= \frac{640}{4} \\
 &= \underline{\underline{160}}
 \end{aligned}$$

No. of pages in
 Vol. I = 160 pgs.
 Vol. II = 160 + 54 = 214 pgs.
 Vol. III & IV = 214 + 32 = 246 pgs.

$$\begin{aligned}
 d. \quad x + x + x + 2x + 2x + 2x &= 720 \\
 9x &= 720 \\
 x &= \frac{720}{9} \\
 &= 80 \\
 2x &= 80 \times 2 = 160 \\
 \text{Angles} &= \underline{\underline{80^\circ, 80^\circ, 80^\circ, 160^\circ, 160^\circ, 160^\circ}}
 \end{aligned}$$

e. x and $2x$ are exterior angles.

$$x + x + x + x + 2x + 2x + 2x + 2x = 360$$

$$12x = 360$$

$$x = \frac{360}{12}$$

$$= 30^\circ$$

$$\text{int. angle} + \text{ext. angle} = 180$$

$$\text{int. angle} = 180 - 30$$

$$= 150$$

$$[x + \text{int. angle} = 180]$$

$$\text{ext. angle } 2x = 2 \times 30 = 60.$$

$$\underline{\text{int angle}} = 180 - 60 = 120.$$

$$[2x + \text{int angle} = 180]$$

Interior angles are $= 120^\circ, 120^\circ, 120^\circ, 120^\circ$

$150^\circ, 150^\circ, 150^\circ, 150^\circ$