

Chapter-16, Exercise 16e

1.  $\hat{A} = 62^\circ$ ,  $\overset{(AB)}{\text{adj}} = 3 \text{ cm}$ ,  $\overset{(BC)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{A}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{3} = \tan 62^\circ$$

$$\frac{x}{3} = 1.8807$$

$$x = 1.8807 \times 3$$

$$x = 5.6421$$

$$BC = \underline{5.64 \text{ cm}}$$

7.)  $\hat{A} = 48.7^\circ$ ,  $\overset{(AB)}{\text{adj}} = 4 \text{ cm}$ ,  $\overset{(BC)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{A}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{4} = \tan 48.7^\circ$$

$$\frac{x}{4} = 1.138276113$$

$$x = 1.138276113 \times 4$$

$$x = 4.553104454$$

$$BC = \underline{4.55 \text{ cm}}$$

6.)  $\hat{A} = 28.3^\circ$ ,  $\overset{(AB)}{\text{adj}} = 10 \text{ cm}$ ,  $\overset{(BC)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{A}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{10} = \tan 28.3^\circ$$

$$\frac{x}{10} = 0.53844$$

$$x = 0.53844 \times 10$$

$$x = 5.3844$$

$$BC = \underline{5.38 \text{ cm}}$$

8.)  $\hat{A} = 42^\circ$ ,  $\overset{(AB)}{\text{adj}} = 6 \text{ cm}$ ,  $\overset{(BC)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{A}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{6} = \tan 42^\circ$$

$$\frac{x}{6} = 0.90040$$

$$x = 0.90040 \times 6$$

$$x = 5.4024$$

$$BC = \underline{5.40 \text{ cm}}$$

11.)  $\hat{B} = 35^\circ$ ,  $\overset{(AB)}{\text{adj}} = 10 \text{ cm}$ ,  $\overset{(AC)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{B}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{10} = \tan 35^\circ$$

$$\frac{x}{10} = 0.70020$$

$$x = 7.0020$$

$$AC = \underline{7.00 \text{ cm}}$$

10.)  $\hat{X} = 27.5^\circ$ ,  $\overset{(xy)}{\text{adj}} = 6 \text{ cm}$ ,  $\overset{(yz)}{\text{opp}} = x \text{ cm}$

$$\tan(\hat{X}) = \frac{\text{opp}}{\text{adj}}$$

$$\frac{x}{6} = \tan 27.5^\circ$$

$$\frac{x}{6} = 0.52056$$

$$x = 3.12336$$

$$yz = \underline{3.12 \text{ cm}}$$