

$$5. \sin x = \frac{5}{13}, \operatorname{cosec} x = \frac{13}{5}, \cos x = -\frac{12}{13}, \sec x = -\frac{13}{12}, \cot x = -\frac{12}{5}$$

$$6. \frac{1}{\sqrt{2}}$$

$$7. 2$$

$$8. \sqrt{3}$$

$$9. \frac{\sqrt{3}}{2}$$

$$10. 1$$

EXERCISE 3.3

$$5. \text{ (i) } \frac{\sqrt{3}+1}{2\sqrt{2}} \quad \text{(ii) } 2 - \sqrt{3}$$

EXERCISE 3.4

$$1. \frac{\pi}{3}, \frac{4\pi}{3}, n\pi + \frac{\pi}{3}, n \in \mathbf{Z}$$

$$2. \frac{\pi}{3}, \frac{5\pi}{3}, 2n\pi \pm \frac{\pi}{3}, n \in \mathbf{Z}$$

$$3. \frac{5\pi}{6}, \frac{11\pi}{6}, n\pi + \frac{5\pi}{6}, n \in \mathbf{Z}$$

$$4. \frac{7\pi}{6}, \frac{11\pi}{6}, n\pi + (-1)^n \frac{7\pi}{6}, n \in \mathbf{Z}$$

$$5. x = \frac{n\pi}{3} \text{ or } x = n\pi, n \in \mathbf{Z}$$

$$6. x = (2n+1)\frac{\pi}{4}, \text{ or } 2n\pi \pm \frac{\pi}{3}, n \in \mathbf{Z}$$

$$7. x = n\pi + (-1)^n \frac{7\pi}{6} \text{ or } (2n+1)\frac{\pi}{2}, n \in \mathbf{Z}$$

$$8. x = \frac{n\pi}{2}, \text{ or } \frac{n\pi}{2} + \frac{3\pi}{8}, n \in \mathbf{Z}$$

$$9. x = \frac{n\pi}{3}, \text{ or } n\pi \pm \frac{\pi}{3}, n \in \mathbf{Z}$$

Miscellaneous Exercise on Chapter 3

$$8. \frac{2\sqrt{5}}{5}, \frac{\sqrt{5}}{5}, \frac{1}{2}$$

$$9. \frac{\sqrt{6}}{3}, -\frac{\sqrt{3}}{3}, -\sqrt{2}$$

$$10. \frac{\sqrt{8+2\sqrt{15}}}{4}, \frac{\sqrt{8-2\sqrt{15}}}{4}, 4+\sqrt{15}$$