EXERCISE 2.1

Find the principal values of the following:

1 $\sin^{-1}\left(-\frac{1}{2}\right)$ **2** $\cos^{-1}\left(\frac{3}{2}\right)$ **3** $\csc^{-1}(2)$

4 $\tan^{-1}(-\sqrt{3})$ **5** $\cos^{-1}\left(-\frac{1}{2}\right)$ **6** $\tan^{-1}(-1)$

7 $\sec^{-1}\left(\frac{2}{3}\right)$ **8** $\cot^{-1}(3)$ **9** $\cos^{-1}\left(-\frac{1}{2}\right)$

10 $\csc^{-1}(-2)$

Find the values of the following:

11 $\tan^{-1}(1) + \cos^{-1}\left(\frac{1}{2}\right) + \sin^{-1}\left(\frac{1}{2}\right)$

12 $\cos^{-1}\left(\frac{1}{2}\right) + 2\sin^{-1}\left(\frac{1}{2}\right)$

13 If $\sin^{-1} x = y$, then which of the following is true?

(A) $0 \leq y \leq \pi$

(B) $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$

(C) $0 < y < \pi$

(D) $-\frac{\pi}{2} < y < \frac{\pi}{2}$

14 Solve:

$$\tan^{-1}\left(-\frac{1}{\sqrt{3}}\sec 2\right)$$

(A) π

(B) $-\frac{\pi}{3}$

(C) $\frac{\pi}{3}$

(D) $\frac{2\pi}{3}$