

# Mathematics

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## (Chapter 2)(Inverse Trigonometric Functions)

(Class XII)

### (Exemplar Problems)

#### Objective Type Questions

Choose the correct answers from the given four options in the following (MCQ):

#### Question 29:

The value of the expression  $2\sec^{-1}2 + \sin^{-1}\frac{1}{2}$  is

- (A)  $\frac{\pi}{6}$                       (B)  $\frac{5\pi}{6}$                       (C)  $\frac{7\pi}{6}$                       (D) 1

#### Answer 29:

- (B)  $\frac{5\pi}{6}$

#### Solution:

To find:  $2\sec^{-1}2 + \sin^{-1}\frac{1}{2}$



Now, we have  $2\sec^{-1}2 + \sin^{-1}\frac{1}{2}$

$$\Rightarrow 2 \times \frac{\pi}{3} + \frac{\pi}{6} \quad \left[ \because \sec^{-1}2 = \frac{\pi}{3} \text{ and } \sin^{-1}\frac{1}{2} = \frac{\pi}{6} \right]$$

$$= \frac{2\pi}{3} + \frac{\pi}{6}$$

$$= \frac{4\pi + \pi}{6} = \frac{5\pi}{6}$$

$$\Rightarrow 2\sec^{-1}2 + \sin^{-1}\frac{1}{2} = \frac{5\pi}{6}$$

Hence, the option (B) is correct.

