Worksheet-02

Inverse Trigonometry Functions Date:\_\_/\_\_/\_\_

- 1. Show that  $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{2}{11} = \tan^{-1} \frac{3}{4}$
- 2. Express  $\tan^{-1} \left( \frac{\cos x}{1 \sin x} \right), \frac{-3\pi}{2} < x < \frac{\pi}{2}$  in the simplest form.
- 3. Express  $\tan^{-1}\left(\frac{3a^2x-x^3}{a^3-3ax^2}\right)$ , a>0;  $\frac{a}{\sqrt{3}} < x < \frac{a}{\sqrt{3}}$  in the simplest form.

Find the values of each of the following:

- 4.  $\tan^{-1} \left[ 2\cos\left(2\sin^{-1}\frac{1}{2}\right) \right]$
- 5.  $\cot (\tan^{-1} a + \cot^{-1} a)$
- 6.  $\sin^{-1}\left(\sin\frac{2\pi}{3}\right)$
- 7. If  $\tan -1 \frac{x-1}{x-2} + \tan -1 \frac{x+1}{x+2} = \frac{\pi}{4}$ , then find the value of x.