VSA
A Real English Medium School

VIDYA SHREE ACADEMY
SR. SEC. SCHOOL

An English Medium Co.Ed. School | Science & Commerce

Little Steps
Pre Primary wing of VSA

W : www.vsajaipur.com | E : vsajaipur@gmail.com M. : +91 9460356652, 8058999828
Add. : 84, Krishna Vihar, Behind Narayan Niwas, Gopalpura Bypass, Jaipur - 302015
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Worksheet for Subject -Maths **Class-XII** **Topic Inverse Trigonometry Functions**

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.