

Trigonometric Expressions

Name: _____

Date: _____

Evaluate the following trigonometric expressions.

1) $\tan^{-1}\left(\sin\left(\frac{71\pi}{2}\right)\right)$

2) $\operatorname{cosec}^{-1}\left(\tan\left(\frac{3\pi}{4}\right)\right)$

3) $\cos^{-1}\left(\sec\left(\frac{81\pi}{3}\right)\right)$

4) $\sin^{-1}\left(-\frac{1}{2}\cot\left(\frac{\pi}{6}\right)\right)$

5) $\cos^{-1}\left(-\frac{1}{2}\cot\left(\frac{\pi}{6}\right)\right)$

6) $\cot^{-1}\left(\frac{1}{2}\operatorname{cosec}\left(\frac{\pi}{6}\right)\right)$

7) $\sec^{-1}\left(\cos\left(\frac{\pi}{2}\right)\right)$

8) $\sin^{-1}\left(-\frac{1}{2}\sec\left(\frac{6\pi}{9}\right)\right)$

9) $\tan^{-1}\left(-\frac{1}{2}\sec\left(\frac{\pi}{6}\right)\right)$

10) $\cot^{-1}\left(-\frac{1}{2}\sec\left(\frac{\pi}{3}\right)\right)$

11) $\cos^{-1}\left(-\frac{4}{8}\tan\left(\frac{\pi}{3}\right)\right)$

12) $\sec^{-1}\left(\frac{1}{2}\cos\left(\frac{\pi}{2}\right)\right)$

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Name: _____

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Evaluate the following trigonometric expressions.

1) $\tan^{-1}\left(\sin\left(\frac{71\pi}{2}\right)\right)$

$$\underline{-\frac{\pi}{4}}$$

2) $\operatorname{cosec}^{-1}\left(\tan\left(\frac{3\pi}{4}\right)\right)$

$$\underline{\frac{\pi}{2}}$$

3) $\cos^{-1}\left(\sec\left(\frac{81\pi}{3}\right)\right)$

$$\underline{\pi}$$

4) $\sin^{-1}\left(-\frac{1}{2}\cot\left(\frac{\pi}{6}\right)\right)$

$$\underline{-\frac{\pi}{3}}$$

5) $\cos^{-1}\left(-\frac{1}{2}\cot\left(\frac{\pi}{6}\right)\right)$

$$\underline{\frac{\pi}{6}}$$

6) $\cot^{-1}\left(\frac{1}{2}\operatorname{cosec}\left(\frac{\pi}{6}\right)\right)$

$$\underline{\frac{\pi}{4}}$$

7) $\sec^{-1}\left(\cos\left(\frac{\pi}{2}\right)\right)$

$$\underline{0}$$

8) $\sin^{-1}\left(-\frac{1}{2}\sec\left(\frac{6\pi}{9}\right)\right)$

$$\underline{\frac{\pi}{2}}$$

9) $\tan^{-1}\left(-\frac{1}{2}\sec\left(\frac{\pi}{6}\right)\right)$

$$\underline{-\frac{\pi}{6}}$$

10) $\cot^{-1}\left(-\frac{1}{2}\sec\left(\frac{\pi}{3}\right)\right)$

$$\underline{\frac{3\pi}{4}}$$

11) $\cos^{-1}\left(-\frac{4}{8}\tan\left(\frac{\pi}{3}\right)\right)$

$$\underline{\frac{5\pi}{6}}$$

12) $\sec^{-1}\left(\frac{1}{2}\cos\left(\frac{\pi}{2}\right)\right)$

$$\underline{0}$$