

# Trigonometric Expressions

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Evaluate the following trigonometric expressions.

1)  $\sin^{-1}\left(\frac{1}{2}\cot\left(\frac{5\pi}{4}\right)\right)$

$\frac{\pi}{6}$

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2)  $\sec^{-1}\left(\frac{16}{4}\cos\left(\frac{5\pi}{2}\right)\right)$

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

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

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5)  $\tan^{-1}(\sec(\pi))$

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

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

---

8)  $\cos^{-1}(\tan(\pi))$

---

9)  $\cos^{-1}\left(\frac{\sqrt{3}}{2}\tan\left(\frac{\pi}{4}\right)\right)$

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

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11)  $\cot^{-1}(\cos(-2\pi))$

---

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

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2)  $\sec^{-1}\left(\frac{16}{4}\cos\left(\frac{5\pi}{2}\right)\right)$

$$0$$

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

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

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

$$0$$

5)  $\tan^{-1}(\sec(\pi))$

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

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

$$\frac{3\pi}{2}$$

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

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11)  $\cot^{-1}(\cos(-2\pi))$

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

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

$$0$$