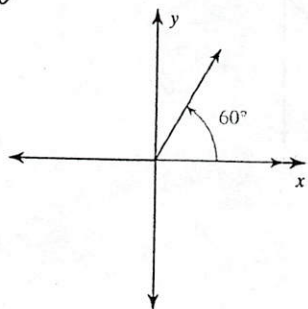


Exact Trig Values of Special Angles

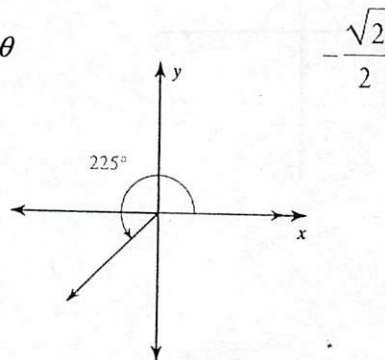
Find the exact value of each trigonometric function.

1) $\tan \theta$



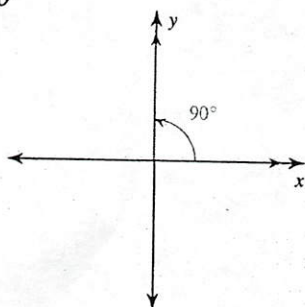
$\sqrt{3}$

2) $\sin \theta$



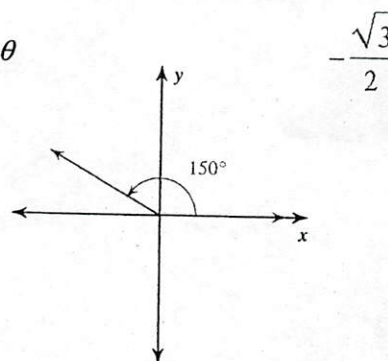
$-\frac{\sqrt{2}}{2}$

3) $\sin \theta$



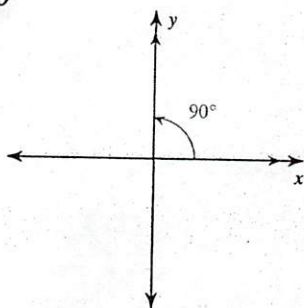
1

4) $\cos \theta$



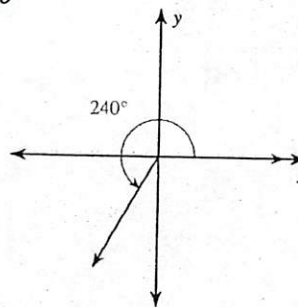
$-\frac{\sqrt{3}}{2}$

5) $\cos \theta$



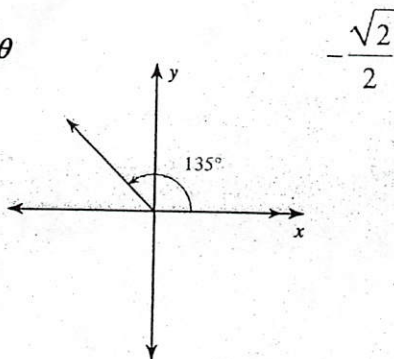
0

6) $\tan \theta$



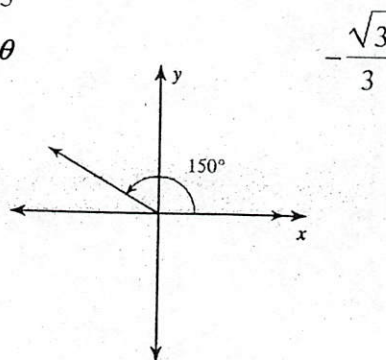
$\sqrt{3}$

7) $\cos \theta$



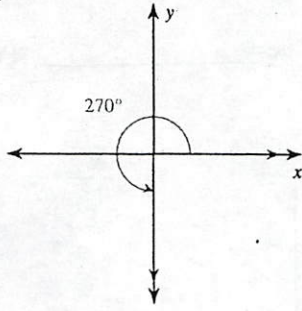
$-\frac{\sqrt{2}}{2}$

8) $\tan \theta$



$-\frac{\sqrt{3}}{3}$

9) $\cos \theta$



0

11) $\cos 270^\circ$

0

13) $\cot \frac{7\pi}{4}$

-1

15) $\csc 225^\circ$

$-\sqrt{2}$

17) $\csc 90^\circ$

1

19) $\sin \frac{\pi}{4} \frac{\sqrt{2}}{2}$

21) $\tan -\frac{13\pi}{6} -\frac{\sqrt{3}}{3}$

23) $\cos 990^\circ$ 0

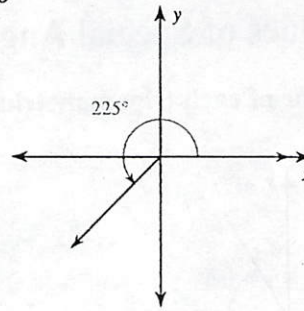
25) $\csc -\frac{5\pi}{6} -2$

27) $\sin \frac{29\pi}{6} \frac{1}{2}$

29) $\cos -\frac{11\pi}{2}$

0

10) $\tan \theta$



1

12) $\sin 0$

0

14) $\csc \frac{2\pi}{3} \frac{2\sqrt{3}}{3}$

16) $\sin 300^\circ -\frac{\sqrt{3}}{2}$

18) $\tan 240^\circ$

$\sqrt{3}$

20) $\tan 120^\circ$

$-\sqrt{3}$

22) $\cos -630^\circ$ 0

24) $\csc -\frac{31\pi}{6} 2$

26) $\cos -\frac{17\pi}{3} \frac{1}{2}$

28) $\sec 945^\circ$

$-\sqrt{2}$

30) $\sin -2\pi$

0

Name _____

Date _____

WORKSHEET - THE BASIC 8 TRIG IDENTITIES

Simplify each expression to a single trig function or number.

1. $\sec \theta \sin \theta$

$$\frac{1}{\cos \theta} \cdot \sin \theta = \frac{\sin \theta}{\cos \theta}$$

$$= \tan \theta$$

2. $\cos \theta \tan \theta$

$$\cos \theta \cdot \frac{\sin \theta}{\cos \theta} = \sin \theta$$

3. $\tan^2 \theta - \sec^2 \theta$

$$\tan^2 \theta - (1 + \tan^2 \theta)$$

$$= -1$$

4. $1 - \cos^2 \theta$

$$= \sin^2 \theta$$

5. $(1 - \cos \theta)(1 + \cos \theta)$

$$1 - \cos^2 \theta$$

$$= \sin^2 \theta$$

6. $(\sec x - 1)(\sec x + 1)$

$$\sec^2 x - 1$$

$$= \tan^2 \theta$$

7. $\frac{1}{\sin^2 A} - \frac{1}{\tan^2 A}$

$$\csc^2 A - \cot^2 A$$

$$= 1$$

8. $1 - \frac{\sin^2 \theta}{\tan^2 \theta}$

$$1 - \frac{\sin^2 \theta}{\sin^2 \theta / \cos^2 \theta}$$

$$= 1 - \sin^2 \theta \cdot \frac{\cos^2 \theta}{\sin^2 \theta}$$

$$= 1 - \cos^2 \theta$$

$$= \sin^2 \theta$$

$$9. \frac{1}{\cos^2 \theta} - \frac{1}{\cot^2 \theta}$$

$$\sec^2 \theta - \tan^2 \theta = 1$$

$$10. \cos \theta (\sec \theta - \cos \theta)$$

$$= \cos \theta \sec \theta - \cos^2 \theta$$

$$= \cos \theta \cdot \frac{1}{\cos \theta} - \cos^2 \theta$$

$$= 1 - \cos^2 \theta$$

$$= \sin^2 \theta$$

$$11. \cos^2 A (\sec^2 A - 1)$$

$$= \cos^2 A (\tan^2 A)$$

$$= \cos^2 A \left(\frac{\sin^2 A}{\cos^2 A} \right)$$

$$= \sin^2 A$$

$$12. (1 - \cos x)(1 + \sec x)(\cos x)$$

$$= (1 - \cos x)(\cos x + 1)$$

$$= (1 - \cos x)(1 + \cos x)$$

$$= 1 - \cos^2 x$$

$$= \sin^2 x$$

$$13. \frac{\sin x \cos x}{1 - \cos^2 x}$$

$$\frac{\sin x \cos x}{\sin^2 x} = \frac{\cos x}{\sin x}$$

$$= \cot x$$

$$14. \frac{\tan^2 \theta}{\sec \theta + 1} + 1$$

$$= \frac{\sec^2 \theta - 1}{\sec \theta + 1} + 1$$

$$= \frac{(\sec \theta + 1)(\sec \theta - 1)}{\sec \theta + 1} + 1$$

$$= \sec \theta - 1 + 1$$

$$= \sec \theta$$