

Name _____ Date _____

Chapter 1 Review 4

Find the complement and the supplement of each angle.

1) 60°

2) 175°

3) y°

Find a positive and a negative coterminal angle.

4) 85°

5) -150°

6) 620°

Find the six trig. functions if the given point lies on the terminal side of θ .

7) $(-2, 3)$

8) $(\sqrt{5}, 2)$

9) $(-5, -12)$

Name the two quadrants θ could terminate in if:

10) $\sin \theta = \frac{3}{5}$

11) $\tan \theta = 1$

12) $\sec \theta = \frac{-25}{24}$

13) If $\sin \theta = \frac{2}{3}$ in QI, then $\cos \theta =$

14) If $\cot \theta = \frac{4}{3}$ in QIII, then $\sin \theta =$

15) If $\csc \theta = \sqrt{3}$ in QII, then $\cos \theta =$

16) If $\sin \theta = \frac{-1}{2}$ in QIV, then $\sec \theta =$

17) If $\tan \theta = \frac{-12}{5}$ in QII, then $\csc \theta =$

Simplify (Add, Subtract, Multiply).

$$18) \frac{1}{\cos \theta} - \frac{\cos \theta}{\sin \theta}$$

$$19) \cos \theta (\sec \theta - \cos \theta)$$

$$20) (\tan \theta + 2)(\tan \theta - 5)$$

$$21) (1 - \sin \theta)(1 + \sin \theta)$$

Substitute and simplify.

$$22) \sqrt{81 - x^2}, x = 9 \sin \theta$$

$$23) \sqrt{36 - 4x^2}, x = 3 \cos \theta$$

$$24) \sqrt{9 + x^2}, x = 3 \tan \theta$$

$$25) \sqrt{x^2 - 25}, x = 5 \sec \theta$$

Write using $\sin \theta$ and $\cos \theta$, then simplify.

$$26) \sin \theta \tan \theta$$

$$27) \frac{\cos \theta}{\sec \theta}$$

$$28) \sin \theta \cot \theta \sec \theta$$

$$29) \frac{1 - \cos^2 \theta}{\cos \theta \tan \theta}$$

Prove the identity.

$$30) 1 - \frac{\sin \theta}{\csc \theta} = \cos^2 \theta$$

$$31) \cos \theta \cot \theta + \sin \theta = \csc \theta$$

Answer

1) $c = 30^\circ$ 2) $c = -85^\circ$ 3) $c = 90^\circ - y^\circ$ 4) 445° 5) -510° 6) 260°
 $s = 120^\circ$ $s = 5^\circ$ $s = 180^\circ - y^\circ$ -275 210° -100

$$\sin \theta = \frac{3}{\sqrt{13}} \quad \csc \theta = \frac{\sqrt{13}}{3}$$

$$\sin \theta = \frac{2}{3} \quad \csc \theta = \frac{3}{2}$$

7) $\cos \theta = \frac{-2}{\sqrt{13}} \quad \sec \theta = \frac{-\sqrt{13}}{2}$

8) $\cos \theta = \frac{\sqrt{5}}{3} \quad \sec \theta = \frac{3}{\sqrt{5}}$

$$\tan \theta = \frac{-3}{2} \quad \cot \theta = \frac{-2}{3}$$

$$\tan \theta = \frac{2}{\sqrt{5}} \quad \cot \theta = \frac{\sqrt{5}}{2}$$

$$\sin \theta = \frac{-12}{13} \quad \csc \theta = \frac{-13}{12}$$

9) $\cos \theta = \frac{-5}{13} \quad \sec \theta = \frac{-13}{5}$ 10) QI, QII 11) QI, QIII 12) QII, QIII

$$\tan \theta = \frac{12}{5} \quad \cot \theta = \frac{5}{12}$$

13) $+\frac{\sqrt{5}}{3}$ 14) $-\frac{3}{5}$ 15) $-\frac{\sqrt{2}}{\sqrt{3}}$ or $-\sqrt{\frac{2}{3}}$ 16) $+\frac{2}{\sqrt{3}}$ 17) $\frac{13}{12}$

18) $\frac{\sin \theta - \cos^2 \theta}{\sin \theta \cos \theta}$ 19) $\sin^2 \theta$ 20) $\tan^2 \theta - 3 \tan \theta - 10$ 21) $\cos^2 \theta$

22) $9|\cos \theta|$ 23) $6|\sin \theta|$ 24) $3|\sec \theta|$ 25) $5|\tan \theta|$ 26) $\frac{\sin^2 \theta}{\cos \theta}$ 27) $\cos^2 \theta$

28) 1 29) $\sin \theta$ 30) $\cos^2 \theta$ 31) $\csc \theta$