Math 36

Test 1 Pre-Test ANSWERS

1. $280°$

2. $m\angle XYZ = 77° 31' 45''$

3. $m\angle A = 67° 41' 19''$

4. $m\angle XYZ = 46° 36' 30''$

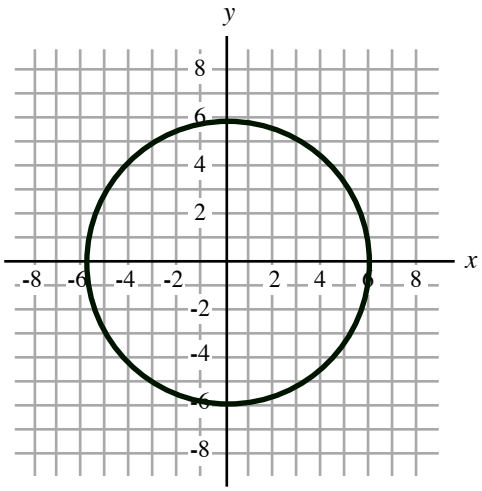
5. **a)** $m\angle PTR = 57° 27' 44''$ **b)** $m\angle PTM = 31° 45' 39''$

6.

a) $r = 6$

c) $x^2 + y^2 = 36$

6 b)



7. $\left(-\frac{5\sqrt{3}}{9}\right)^2 + \left(\frac{\sqrt{6}}{9}\right)^2 \stackrel{?}{=} 1$

$\frac{25\cdot 3}{81} + \frac{6}{81} \stackrel{?}{=} 1$

$\frac{75+6}{81} \stackrel{?}{=} 1$

$\frac{81}{81} = 1$ Yes.

8. $\sin\theta = -\frac{2}{3}$

9. $\theta = = 300°$

10. $m\text{Arc}_{AB} = \frac{8\pi}{3}$ inches

11. $x = 20$

12. $x = 9$

13. a) $y = 2$, $h = 2\sqrt{3}$, $p = 2\sqrt{3}$, $m = 2\sqrt{6}$

b) $y = 3\sqrt{3}$, $x = 6\sqrt{3}$, $p = 9$, $m = 9\sqrt{2}$

c) $p = 6\sqrt{2}$, $h = 6\sqrt{2}$, $y = 2\sqrt{6}$, $x = 4\sqrt{6}$

14. a) $h = 5\sqrt{3}$, $x = 10$, $p = 5\sqrt{2}$, $m = 5\sqrt{2}$

b) $y = 3\sqrt{3}$, $h = 9$, $p = 3\sqrt{6}$, $m = 3\sqrt{6}$

c) $y = 3\sqrt{6}$, $x = 6\sqrt{6}$, $p = 6\sqrt{3}$, $m = 6\sqrt{3}$

15. a) QII b) QIII c) QI d) QIV
e) QIII f) QI g) QIV h) QII

16. coterminal angle = $120°$ (graph not shown)

17. coterminal angle = $-100°$ (graph not shown)

18. $\sin\theta = -\frac{\sqrt{7}}{4}$ $\quad \cos\theta = \frac{3}{4}$ $\quad \tan\theta = -\frac{\sqrt{7}}{3}$

$\cot\theta = -\frac{3\sqrt{7}}{7}$ $\quad \sec\theta = \frac{4}{3}$ $\quad \csc\theta = -\frac{4\sqrt{7}}{7}$

19. $\sin\theta = 1$ $\quad \cos\theta = 0$ $\quad \tan\theta$ is undefined

$\cot\theta = 0$ $\quad \sec\theta$ is undefined $\quad \csc\theta = 1$

20. $\sin\theta = -\frac{4}{5}$ $\quad \tan\theta = -\frac{4}{3}$ $\quad \sec\theta = \frac{5}{3}$

21. $\sin\theta = \frac{\sqrt{5}}{3}$ $\quad \cos\theta = -\frac{2}{3}$ $\quad \tan\theta = -\frac{\sqrt{5}}{2}$

22.	$\sin 30° = \frac{1}{2}$	$\sin 60° = \frac{\sqrt{3}}{2}$	$\sin 45° = \frac{\sqrt{2}}{2}$
	$\cos 30° = \frac{\sqrt{3}}{2}$	$\cos 60° = \frac{1}{2}$	$\cos 45° = \frac{\sqrt{2}}{2}$
	$\tan 30° = \frac{\sqrt{3}}{3}$	$\tan 60° = \sqrt{3}$	$\tan 45° = 1$
	$\cot 30° = \sqrt{3}$	$\cot 60° = \frac{\sqrt{3}}{3}$	$\cot 45° = 1$
	$\sec 30° = \frac{2\sqrt{3}}{3}$	$\sec 60° = 2$	$\sec 45° = \sqrt{2}$
	$\csc 30° = 2$	$\csc 60° = \frac{2\sqrt{3}}{3}$	$\csc 45° = \sqrt{2}$

23. 3 **24.** 1 **25.** $\sqrt{2}$ **26.** $\frac{1}{3}$ **27.** 2 **28.** $\frac{3}{2}$

29. $\frac{\cos\theta + 1}{\cos\theta}$ **30.** $\cos\theta$

31.

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

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

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

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

$$\sec^2\theta = \sec^2\theta \quad QED$$

32.

$$\csc\theta\tan\theta - \cos\theta =$$

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

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

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

$$\frac{\sin^2\theta}{\cos\theta} = \frac{\sin^2\theta}{\cos\theta} \quad QED$$