

1. 280°

2. $m\angle XYZ = 77^\circ 31' 45''$

3. $m\angle A = 67^\circ 41' 19''$

4. $m\angle XYZ = 46^\circ 36' 30''$

5. a) $m\angle PTR = 57^\circ 27' 44''$

b) $m\angle PTM = 31^\circ 45' 39''$

6. a) $r = 6$

6 b)

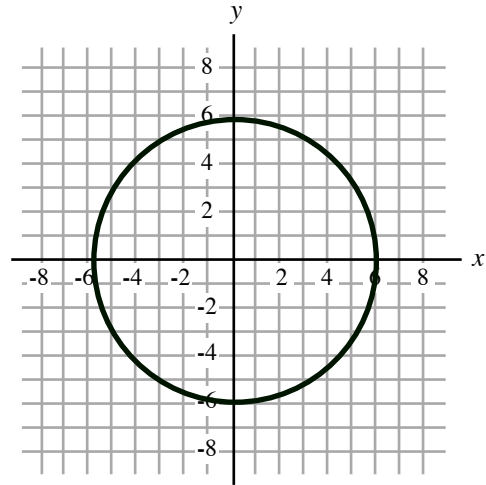
c) $x^2 + y^2 = 36$

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

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

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

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



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

9. $\theta = 300^\circ$

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
 e) QIII f) QI

c) QI d) QIV
 g) QIV h) QII

16. coterminal angle = 120° (graph not shown) 17. coterminal angle = -100° (graph not shown)

18. $\sin \theta = -\frac{\sqrt{7}}{4}$

$\cos \theta = \frac{3}{4}$

$\tan \theta = -\frac{\sqrt{7}}{3}$

$\cot \theta = -\frac{3\sqrt{7}}{7}$

$\sec \theta = \frac{4}{3}$

$\csc \theta = -\frac{4\sqrt{7}}{7}$

19. $\sin \theta = 1$	$\cos \theta = 0$	$\tan \theta$ is undefined
$\cot \theta = 0$	$\sec \theta$ is undefined	$\csc \theta = 1$

20. $\sin \theta = -\frac{4}{5}$	$\tan \theta = -\frac{4}{3}$	$\sec \theta = \frac{5}{3}$
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21. $\sin \theta = \frac{\sqrt{5}}{3}$	$\cos \theta = -\frac{2}{3}$	$\tan \theta = -\frac{\sqrt{5}}{2}$
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22. $\sin 30^\circ = \frac{1}{2}$	$\sin 60^\circ = \frac{\sqrt{3}}{2}$	$\sin 45^\circ = \frac{\sqrt{2}}{2}$
$\cos 30^\circ = \frac{\sqrt{3}}{2}$	$\cos 60^\circ = \frac{1}{2}$	$\cos 45^\circ = \frac{\sqrt{2}}{2}$
$\tan 30^\circ = \frac{\sqrt{3}}{3}$	$\tan 60^\circ = \sqrt{3}$	$\tan 45^\circ = 1$
$\cot 30^\circ = \sqrt{3}$	$\cot 60^\circ = \frac{\sqrt{3}}{3}$	$\cot 45^\circ = 1$
$\sec 30^\circ = \frac{2\sqrt{3}}{3}$	$\sec 60^\circ = 2$	$\sec 45^\circ = \sqrt{2}$
$\csc 30^\circ = 2$	$\csc 60^\circ = \frac{2\sqrt{3}}{3}$	$\csc 45^\circ = \sqrt{2}$

23. 3	24. 1	25. $\sqrt{2}$	26. $\frac{1}{3}$	27. 2	28. $\frac{3}{2}$
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29. $\frac{\cos^2 \theta + 1}{\cos \theta}$	30. $\cos \theta$
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31.	$\frac{\tan \theta}{\sin \theta \cos \theta} =$	32.	$\csc \theta \tan \theta - \cos \theta =$
	$\frac{\frac{\sin \theta}{\cos \theta}}{\sin \theta \cos \theta} \cdot \frac{\frac{\cos \theta}{1}}{\cos \theta} =$		$\frac{1}{\sin \theta} \cdot \frac{\sin \theta}{\cos \theta} - \cos \theta =$
	$\frac{\sin \theta}{\sin \theta \cos^2 \theta} =$		$\frac{1}{\cos \theta} - \cos \theta \cdot \frac{\cos \theta}{\cos \theta} =$
	$\frac{1}{\cos^2 \theta} =$		$\frac{1 - \cos^2 \theta}{\cos \theta} =$
	$\sec^2 \theta = \sec^2 \theta$ QED		$\frac{\sin^2 \theta}{\cos \theta} = \frac{\sin^2 \theta}{\cos \theta}$ QED