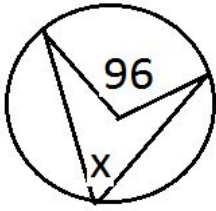


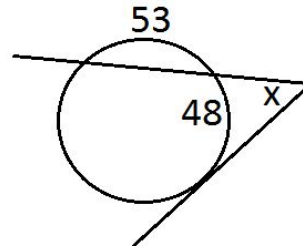
Arcs and Angles of Circles

Solve for x .

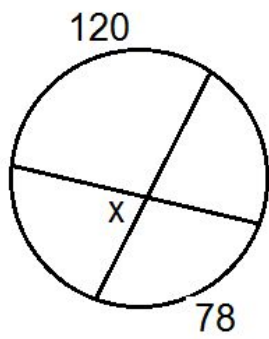
1.



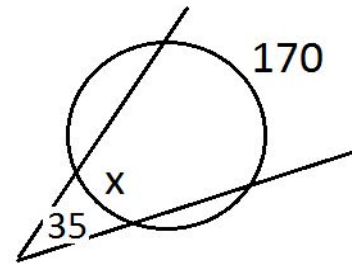
2.



3.



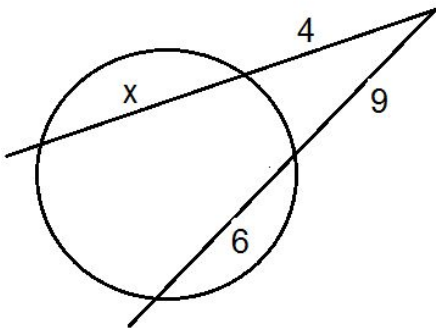
4.



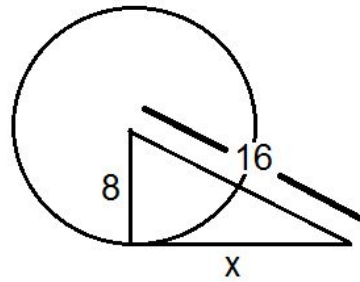
Lengths with Circles

Solve for x .

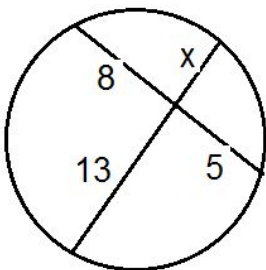
5.



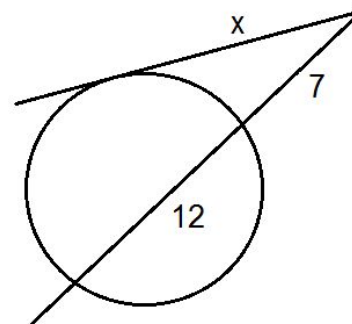
6.



7.



8.



Equation of a Circle

Determine the center and radius.

9. $(x + 2)^2 + (y + 5)^2 = 36$

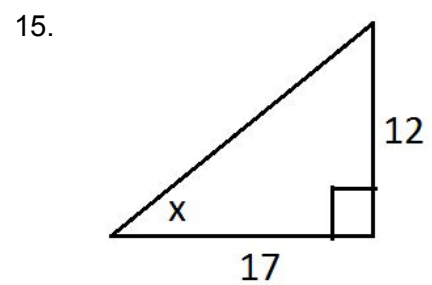
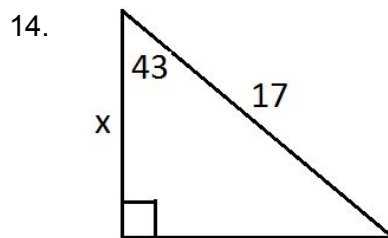
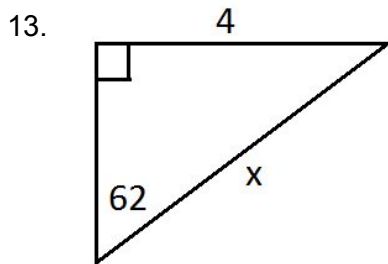
10. $x^2 + (y - 4)^2 = 300$

11. $x^2 + y^2 + 14x - 4y + 44 = 0$

12. $x^2 + y^2 + 4y - 45 = 0$

Right Triangle Trig

Solve for x .



Arc Length and Area of a Sector

Determine the arc length and area for each circle that is described.

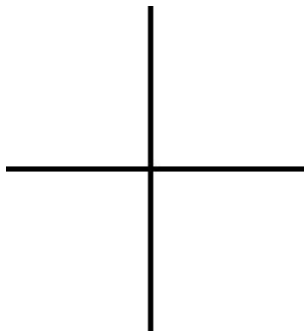
16. central angle = 65° , radius = 12 feet

17. central angle = $\frac{25\pi}{18}$, radius = 6 meters

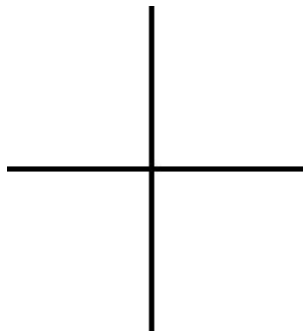
Angles and Their Measures

Sketch each angle in standard position.

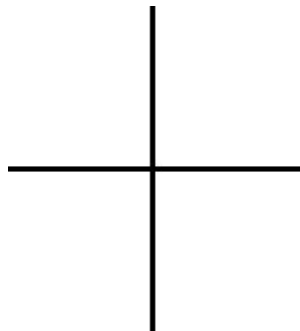
18. 230°



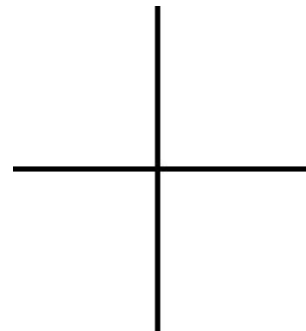
19. -300°



20. $\frac{49\pi}{18}$



21. $\frac{14\pi}{9}$



22. Determine one positive and one negative coterminal angle to 76° .

Exact Values of Trig Ratios

Use the unit circle to determine the exact value of each trig ratio.

23. $\sin \frac{11\pi}{6}$

24. $\cos 150^\circ$

25. $\tan \frac{\pi}{2}$

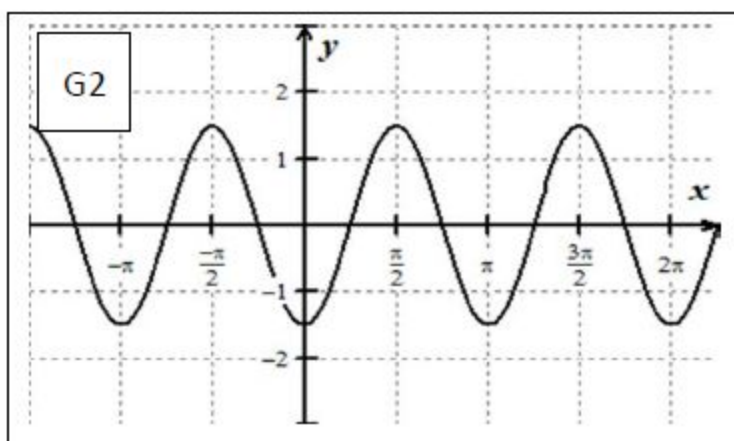
26. $\cos -\frac{8\pi}{3}$

27. $\tan 510^\circ$

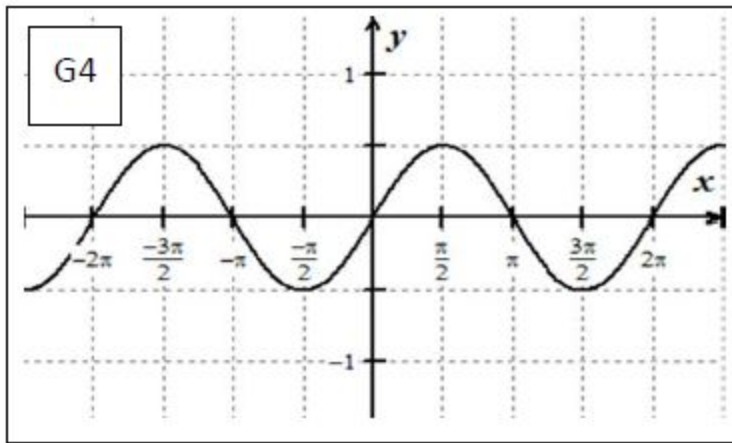
Graphs of Sine and Cosine

Determine the amplitude, period, and frequency of each graph.

28.



29.



Determine the amplitude, period, frequency, and vertical shift of each equation.

30. $y = 5\sin x - 2$

31. $y = -9\cos 6x + 12$