Identify the solution set.

8. $\frac{1}{6x^2}=\frac{1}{2x}+\frac{7}{6x^2}$ LCD $6x^2$

$1=3x+7$

$-6=3x$

$x=-2$

9. $\frac{1}{x}=\frac{6}{5x}+1$ LCD $5x$

$5=6+5x$

$-1=5x$

$x=-\frac{1}{5}$

10. $\frac{15}{x^2-4}+1=\frac{4}{x-2}$ LCD $(x+2)(x-2)$

$15+x^2-4=4x+8$

$x^2-4x+3=0$

$(x-3)(x-1)=0$

$\{3,1\}$

11. $\frac{2x+5}{x+3}-4=\frac{3}{x}$ LCD $x(x+3)$

$2x^2+5x-4x^2-12x=3x+9$

$-2x^2-7x=3x+9$

$-2x^2-10x-9=0$

$x=\frac{10\pm\sqrt{100-72}}{-4}$

$x=\frac{10\pm\sqrt{28}}{-4}$

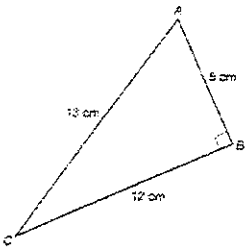
$x=\frac{10\pm2\sqrt{7}}{-4}$

$x=\frac{5\pm\sqrt{7}}{-2}$

Review

Name: _____

Find all 6 trig ratios for angle A.



1) Sin A = $\frac{12}{13}$

2) Cos A = $\frac{5}{13}$

3) Tan A = $\frac{12}{5}$

4) Csc A = $\frac{13}{12}$

5) Sec A = $\frac{13}{5}$

6) Cot A = $\frac{5}{12}$

Identify what quadrant the terminal side of an angle measuring the indicated amount would lie.

7. $\frac{6\pi}{5} = 216^\circ$ — III

8. $\frac{13\pi}{7} \approx 334.3^\circ$ — IV

9. $\frac{8\pi}{11} \approx 130.9^\circ$ — II

Identify the measurement of angle *x*, in degrees, assuming the following characteristics of the angle.

10. $\sin x = 0, \cos x = -1$

$(-1, 0)$

180°

11. $\sin x = \frac{-\sqrt{3}}{2}, \cos x = \frac{1}{2}$

$(\frac{1}{2}, -\frac{\sqrt{3}}{2})$

300°

12. $\csc x = 2, \sec x = \frac{2}{\sqrt{3}}$

$\sin x = \frac{1}{2}, \cos x = \frac{\sqrt{3}}{2}$

$(\frac{\sqrt{3}}{2}, \frac{1}{2})$

30°

13. **What is the minimum value of *y* in the equation** $y = 2\sin x$ **?**

-2

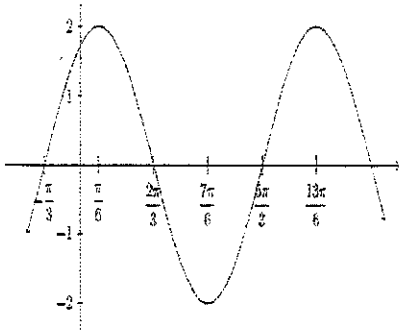
14. **What is the maximum value of *y* in the equation** $y = -4\cos x$ **?**

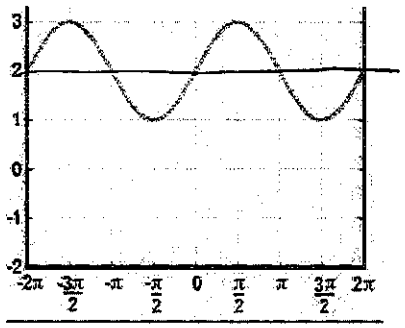
4

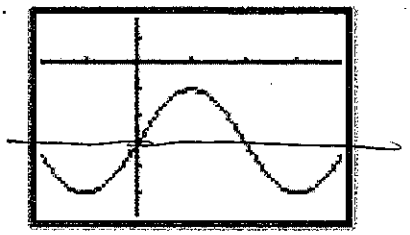
15. **What is the minimum value of *y* in the equation** $y = 3\sin x - 5$ **?**

-8

Identify the amplitude of the function in each of graphs.

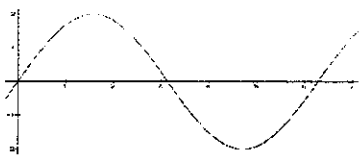
16. 

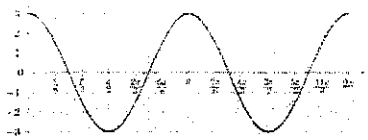
17. 

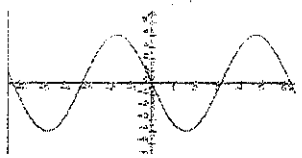
18. 

2 | 1 | 2

State the equation for the following functions.

19. 

20. 

21. 

$y = 2\sin x$ | $y = 3\cos x$ | $y = -4\sin x$

Review

Name: _____

Find the arc length of the circle with the following dimensions to the nearest whole number. $AL = r \cdot \theta$

1. radius = 14, Radians = $\frac{3\pi}{7}$

$14 \cdot \frac{3\pi}{7} = \frac{42\pi}{7}$

$= 6\pi = 18.8 = 19$

2. radius = 6, Radians = $\frac{13\pi}{3}$

$6 \cdot \frac{13\pi}{3} = \frac{78\pi}{3}$

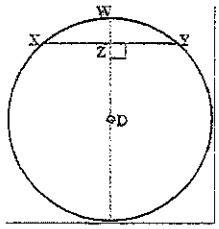
$= 26\pi = 81.7 = 82$

3. radius = 21, Radians = $\frac{7\pi}{5}$

$21 \cdot \frac{7\pi}{5} = \frac{147\pi}{5}$

$= 92.4 = 92$

Use the circle to answer the following. Round to the nearest tenth if necessary.



4. Radius = 13

$\overline{ZD} = 5$

What is $\overline{ZY}$?

$5^2 + x^2 = 13^2$

12

5. Radius = 17

$\overline{XY} = 16$

What is $\overline{ZD}$?

$8^2 + x^2 = 17^2$

15

6. Diameter = 28

$\overline{WZ} = 5$

What is $\overline{ZY}$?

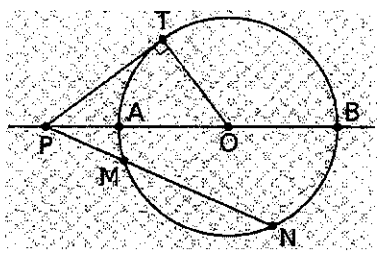
$9^2 + x^2 = 14^2$

$x^2 = 115$

10.7

Use the circle to answer the following. Round to the nearest tenth if necessary.

Assume $\overline{PT}$ is a tangent line.



7. $\overline{PO} = 10$

$\overline{TO} = 6$

What is $\overline{PT}$?

$6^2 + x^2 = 10^2$

8

8. $\overline{PA} = 32$

$\overline{AO} = 9$

What is $\overline{PT}$?

$9^2 + x^2 = 41^2$

$x^2 = 1600$

40

9. Diameter = 34

$\overline{PA} = 11$

What is $\overline{PT}$?

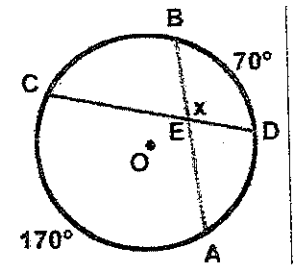
$17^2 + x^2 = 28^2$

$x^2 = 495$

22.2

Find *x*.

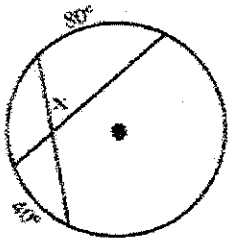
10.



$\frac{170+70}{2}$

120°

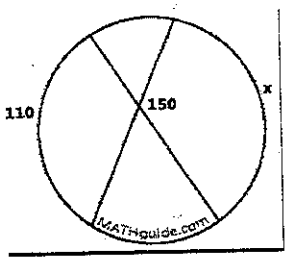
11.



$\frac{80+40}{2}$

60°

12.



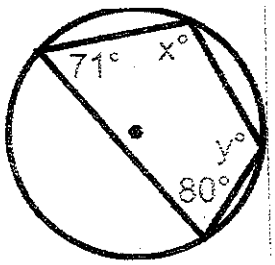
$150 = \frac{110+x}{2}$

$300 = 110 + x$

190°

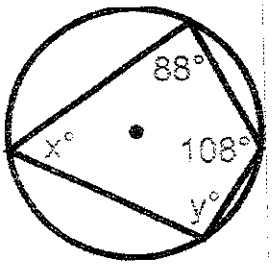
Find *x* and *y*.

13.



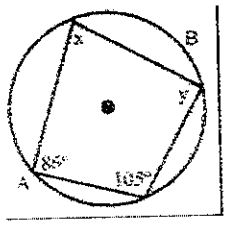
$x = 100^\circ$ $y = 109^\circ$

14.



$x = 72^\circ$, $y = 92^\circ$

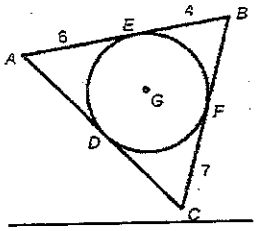
15.



$x = 75^\circ$ $y = 94^\circ$

Find the perimeter of the triangle.

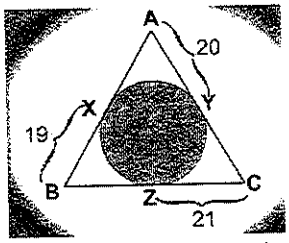
16.



$12 + 8 + 14$

34

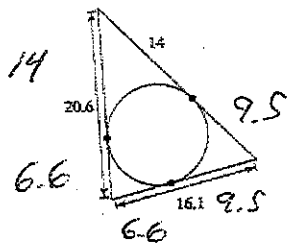
17.



$38 + 40 + 42$

120

18.



60.2

Find the coordinates of the center and the length of the radius of the circles with the following equations.

19. $x^2 + y^2 + 8y = 20$

$x^2 + y^2 + 8y + 16 = 36$

$x^2 + (y+4)^2 = 36$

$(0, -4)$ $r = 6$

20. $x^2 - 10x + y^2 = 56$

$x^2 - 10x + 25 + y^2 = 81$

$(x-5)^2 + y^2 = 81$

$(5, 0)$ $r = 9$

21. $x^2 + 6x + y^2 - 4y = 51$

$x^2 + 6x + 9 + y^2 - 4y + 4 = 64$

$(x+3)^2 + (y-2)^2 = 64$

$(-3, 2)$ $r = 8$