SOH CAH TOA

Name: Young's Key Date: _____ Period: _____

Geometry Bundle 12-14 Test Review

I – Multiple Choice

For each triangle below, solve for *x*.

1. O x, H, 19, 40°

$\sin 40 = \frac{x}{19}$

$x = 19 \cdot \sin 40$

$= 12.213$

2. O 17, A 12, x°

$\tan^{-1}\left(\frac{17}{12}\right) = 54.78$

3. 15, A, x, 28°, H

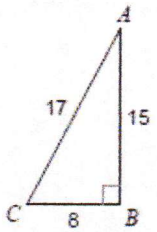
$\cos 28 = \frac{15}{x}$

$15 = x \cdot \cos 28$

$x = \frac{15}{\cos 28} = 16.99$

For questions 4-9, write the trigonometric ratio.

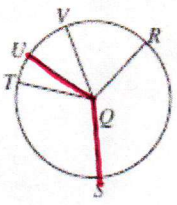
4. tan A = $\frac{8}{15} = 0.533$
5. sin A = $\frac{8}{17} = 0.47$
6. cos A = $\frac{15}{17} = 0.88$
7. tan C = $\frac{15}{8}$
8. sin C = $\frac{15}{17}$
9. cos C = $\frac{8}{17}$



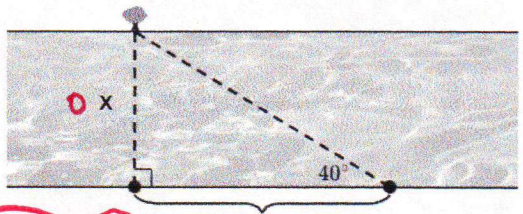
10. Name the major arc and the minor arc for ∠UQS.

major arc: $\overset{\frown}{SRU}$

minor arc: $\overset{\frown}{SU}$



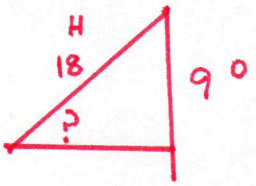
11. The people of Bridgetown wanted to build a bridge across a nearby river. Since they were poor swimmers, a wandering mathematician agreed to measure the width of the river without actually crossing it. He created the diagram below and handed it to the mayor. What was the width of the river?



$\tan 40 = \frac{x}{10}$

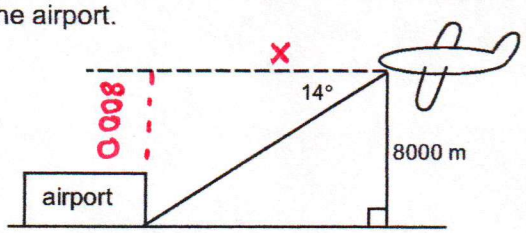
$x = 10 \cdot \tan 40 = 8.391$

12. A 18 foot ladder is leaning against the wall. If the ladder reaches a height of 9 feet on the wall, what angle does the ladder form with the ground? (Draw and label a diagram.)



$\sin^{-1}\left(\frac{9}{18}\right) = 30°$

13. Find the horizontal distance from the plane to the airport.



$\tan 14 = \frac{8000}{x}$

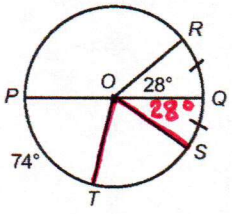
$8000 = x \cdot \tan 14$

$x = \frac{8000}{\tan 14} = 32086.2$

14. Find m∠*TOS*.

180 − 28 − 74 = 78°

m∠TOS = 78°



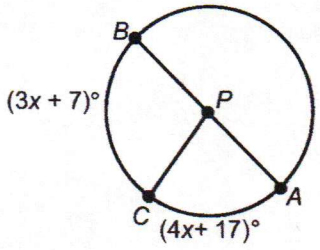
15. Given that $\overline{BA}$ is a diameter, find m$\overset{\frown}{CA}$.

3x + 7 + 4x + 17 = 180

7x + 24 = 180

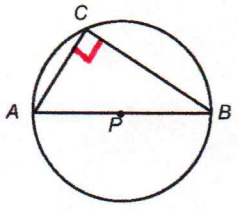
7x = 156

x = 22.2857



16. What is the measure of ∠*C*?

m∠C = 90°



17. From the diagram in #9, if m∠*A* = 60°, find m*CB*.

2(60) = 120

$m\overset{\frown}{CB} = 120°$

18. What is the equation for a circle with a center at (0, 0) and radius = 9?

$(x-0)^2 + (y-0)^2 = 9^2$

$x^2 + y^2 = 81$

19. What is the center and radius of the circle with equation $(x+3)^2 + (y-7)^2 = 36$?

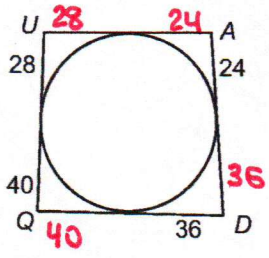
center (−3, 7)

radius = $\sqrt{36} = 6$

20. Find the perimeter of the quadrilateral.

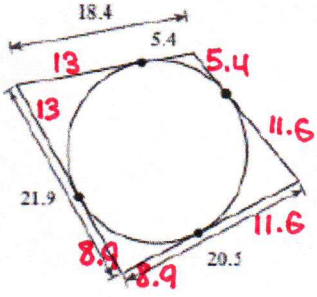
28 + 28 + 24 + 24 + 36 + 36 + 40 + 40

256



21. Find the perimeter of the quadrilateral.

77.8



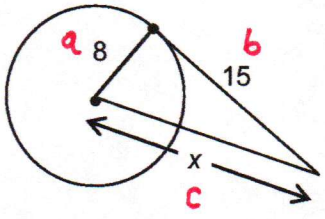
22. Solve for *x*.

$8^2 + 15^2 = c^2$

$64 + 225 = c^2$

$289 = c^2$

c = 17



23. Fine the length of the missing side of the triangle.

$12^2 + b^2 = 20^2$

$144 + b^2 = 400$

$-144 \quad -144$

$b^2 = 256$

b = 16