

Topics for Review

sections are from the Demana textbook unless otherwise noted.

Trigonometry

Chapters 4 and 5, with these exceptions:
omit section 4.6 (“Graphs of Composite Trigonometric Functions”)

Problems

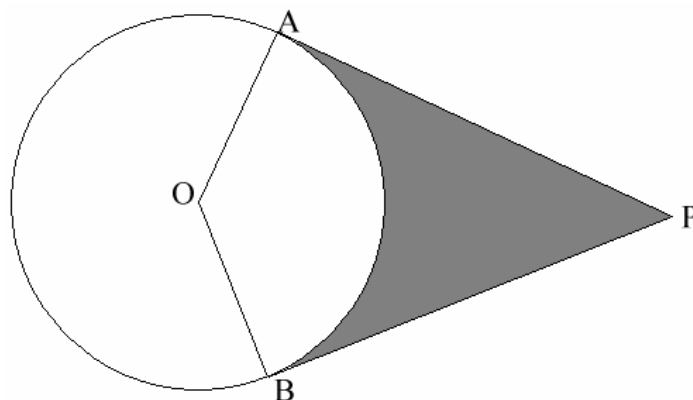
1. a. Without a calculator, evaluate $\tan(\cos^{-1}(3/5))$.

b. In general, find a non-trigonometric expression that is equal to $\tan(\cos^{-1} x)$.

2. For any angle θ , how are $\cos(\frac{\pi}{2} - \theta)$ and $\sin(\pi - \theta)$ related? Justify your answer using a circle diagram.

3. a. Write a function formula for a sinusoidal function $f(x)$ having the following properties:
 - Two adjacent maximum points of $f(x)$ are located at $(3, 5)$ and $(7, 5)$.
 - The graph of $f(x)$ is tangent to the x -axis.
 b. Suppose that the graph of $g(x)$ is formed by shrinking $f(x)$ horizontally by a factor of 8. Write a function formula for $g(x)$.

4. In the diagram, given that O is the center of the circle, PA and PB are tangent to the circle, $OA = 15$, and $PA = 35$, find the perimeter and area of the shaded region.



Honors Advanced Math

Name _____

Review 2

5. For triangle RST, given that $\angle R = 45^\circ$, $RS = 8$, and $ST = 10$, find the remaining measurements of the triangle. There may be one or two sets of answers.

6. For quadrilateral WXYZ, given that $XY = 10$, $\angle Y = 50^\circ$, $YZ = 8$, $\angle Z = 110^\circ$, and $ZW = 6$:
 - a. Find the remaining sides and angles.
 - b. Find the area.

7. Using non-graphical methods, find all solutions to the equation $\sin(3x) = -0.5$ in the interval $0 \leq x < 2\pi$. Check your answer graphically.

8. Using non-graphical methods, find all solutions to the equation $\sin^2 x - \sin x = \cos^2 x$ in the interval $0 \leq x < 2\pi$. Check your answer graphically.

9. Suppose that $\sin \alpha = \frac{3}{5}$ and $\sin \beta = \frac{24}{25}$, where $0 < \alpha < \frac{\pi}{2} < \beta < \pi$. Find $\cos(\alpha + \beta)$.