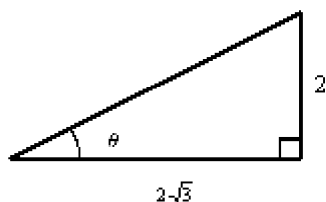


Work together. Use the blank space on this paper; if you run out of space, **Name:** _____
 continue to another sheet of your own.

Pre-Calculus Mid-Term Review Sheet 2

For problem 1, Find the exact value of the six trigonometric functions of the angle θ given in the figure. (Use the Pythagorean Theorem to find the third side of the triangle.)



- 1.
2. If $\cos \theta = \frac{\sqrt{3}}{2}$, find $\tan \theta$.
3. Find all six trigonometric functions of the real number $t = \frac{\pi}{4}$
4. Find all six trigonometric functions of the real number $t = \frac{7\pi}{6}$

Sketch the graph of the function.

5. $f(x) = 3 - e^x$

Evaluate the expression. Round the answer to three decimal places. (Calculator needed here)

6. $\frac{1}{2} e^{0.5}$

Sketch the graph of the function.

7. $y = 4 \sin x$ on the interval $[-2\pi, 2\pi]$

8. $y = 0.5 \sin \left(3x - \frac{\pi}{2} \right) + 1$, on the interval $[-2\pi, 2\pi]$

Solve for x .

9. $e^x = \frac{1}{4}$

10. $\log_{10} x = -3$

Condense the expression to the logarithm of a single quantity.

11. $\left[4 \log_3(x + 6) + 7 \log_3(x + 4) \right] - \frac{1}{2} \log_3 x$

Use the properties of logarithms to expand the expression. (Assume all variables are positive.)

12. $\log_a \frac{4xy^4}{z^3}$

Rewrite the indicated trigonometric function in terms of the angle's reference angle. Use the same function.

13. $\sin(-173^\circ)$

Verify the identity.

14. $\frac{\sec x}{\csc x - \cot x} - \frac{\sec x}{\csc x + \cot x} = 2 \csc x$

15. $\frac{\tan x}{\csc x} = \frac{1}{\cos x} - \cos x$

16. Given the point $(-17, -22)$ is on the terminal side of the angle Θ , find Θ' and Θ . Then evaluate $\sin(\Theta)$.