MATH 1060
Exam 2

No Books
No Notes
No Calculators
Time Limit: 50 min.

Name_____

To receive full credit you must show a lot of steps. Your work must also be neat and well organized. <u>You do not need to rationalize denominators</u>. No calculators.

1) The graph y = sin (x) has the period changed to π , shifted a distance of π/12 to the right, stretched by a factor of 7, then translated 8 units downward. **Find the equation for the curve in its final position.**

2) **Find the exact value of** $\tan 165°$**. Hint: 30 + 135 = 165**

3) **Simplify the expression.** $\cos 10° \cos 35° + \sin 10° \sin 35°$

4) **Simplify the expression.** $\dfrac{\sin 76°}{1 + \cos 76°}$

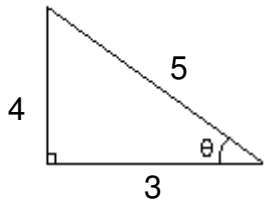
Hint: Use a half-angle identity.

5) **Simplify the expression.** $\cos \frac{7\pi}{12} \cos \frac{5\pi}{12} + \sin \frac{7\pi}{12} \sin \frac{5\pi}{12}$

6) **Verify that this equation is an identity.** $1 + \sec^2 x \sin^2 x = \sec^2 x$

7) **Verify that this equation is an identity.** $\frac{1 - \csc(-x)}{\csc(\frac{\pi}{2} - x)} = \cos x + \cot x$

8)



Find the exact value of cos 2θ. Hint: Use a double-angle identity.

9) **If** sec θ = 8, **and** θ **lies in quadrant I**, **find** $\sin \frac{\theta}{2}$.

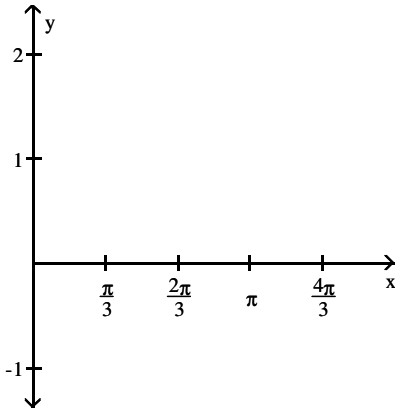
10) **Simplify.** $\sin(x + y) + \sin(x - y)$

11) **Find the exact value of** $\cot \frac{-11\pi}{6}$.

12) **Find the exact value of** $\sin \frac{5\pi}{3}$.

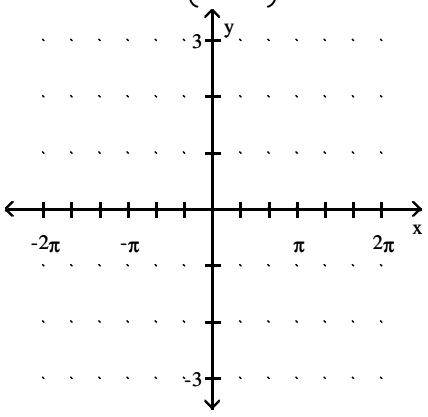
13) The graph of y = tan (x) is shifted a distance of π/3 to the left, then translated 2 units upward. **Find the equation for the curve in its final position.**

14) **Graph the function over a one-period interval.** $y = 2\sin\left(2x - \frac{2\pi}{3}\right) + \frac{1}{2}$



Amplitude = _____ Period = _____ Phase Shift = _____ Frequency = _____

15) **Graph** $y = 2\csc\left(x - \frac{\pi}{6}\right)$.



16) **Find the exact value of** $\cos\left(-\frac{5\pi}{4}\right)$.

My signature below indicates that I have: neither given nor received help to or from another person during this test, not used notes of any kind--paper or electronic, nor used a calculator.

_____
Signature