

<p>1. The expression $\cos y(\csc y - \sec y)$ is equivalent to</p> <p>(1) $\cot y - 1$ (3) $1 - \tan y$ (2) $\tan y - 1$ (4) $-\cos y$</p>	<p>2. Find the exact value of $\sin \frac{\pi}{6} + \tan \frac{\pi}{4}$.</p>	<p>1. _____</p> <p>2. _____</p>
<p>3. State the amplitude, period, and frequency for each of the following functions:</p> <p>a $y = -5 \cos\left(\frac{7\pi}{3}x\right) + 5$</p> <p>b $v = 0.01 \sin(100\pi t) + 1$</p> <p><u>Without using your calculator</u>, determine which of the functions above will <i>never</i> intersect the x-axis and explain how you determined your answer.</p>		<p>3. _____</p> <p>4. _____</p>
<p>4. Rationalize the denominator:</p> $\frac{6}{3 - \sqrt{3}}$	<p>5. What is the image of $(1, 0)$ after a counterclockwise rotation of 60°?</p>	<p>4. _____</p> <p>5. _____</p>
<p>6. The graph of which equation has a period of π radians and passes through the origin?</p> <p>(1) $y = \cos 2x$ (3) $y = \cos \frac{1}{2}x$ (2) $y = \sin 2x$ (4) $y = \sin \frac{1}{2}x$</p>	<p>7. Given the function $g(x) = \frac{2x - 7}{\sqrt{x^2 - 1}}$, determine its domain and explain your answer.</p>	<p>6. _____</p> <p>7. _____</p>
<p>8. Through how many radians does the minute hand of a clock turn in 1 hour and 15 minutes?</p> <p>(1) $\frac{\pi}{4}$ (3) $\frac{3\pi}{2}$ (2) $\frac{5\pi}{2}$ (4) $\frac{9\pi}{4}$</p>	<p>9. Find the product of $(2 + 3i)$ and its conjugate.</p>	<p>8. _____</p> <p>9. _____</p>

10. If $f(x) = 36x^2 + 7$ and $g(x) = (5x)^{\frac{1}{3}}$, find the exact value of $(f \circ g)(\sin \frac{3\pi}{4})$

10.

11. Solve for x : $\log(x - 2) + \log(2x - 3) = 2 \log x$

11.

12. On the accompanying grid, sketch and label the graphs of the equations $y = \tan x$ and $y = -2 \cos 4x$ in the interval $-\pi \leq x \leq \pi$. Using your graph, determine the number of values of x in the interval $-\pi \leq x \leq \pi$ that satisfy the equation $\tan x = -2 \cos 4x$.



12.

13. Express as a single trigonometric

function: $\frac{\sec \theta}{\csc \theta}$

14. The expression $\csc y + 1$ is equivalent to

(1) $\frac{\cot y}{\csc y - 1}$

(3) $\cot y$

(2) $\frac{\sin y + 1}{\sin y}$

(4) $\frac{1 + \cos y}{\cos y}$

13.

14.