

Name _____ DUE DATE: _____

Directions:

- Read each problem carefully and use your knowledge of mathematics to determine your answer.
- In order to receive FULL CREDIT you must either SHOW ALL WORK or EXPLAIN how you got your answer!! PLEASE NOTE: A multiple choice answer alone without any work will only receive half credit.

Question	Your Work/Explanation
1) Find the exact value, in radians, of the real number θ between $(0, 2\pi)$ where $\sin\theta = -\frac{\sqrt{3}}{2} \text{ and } \cos\theta > 0$	
2) Simplify: $\sqrt{75x^2y^{-4}}$ (a) $\frac{5\sqrt{3}x}{y^2}$ (b) $\frac{3\sqrt{5}x}{y^2}$ (c) $5\sqrt{3}xy^2$ (d) $3\sqrt{5}xy^2$	
3) Find the sum of $\sum_{n=1}^4 \frac{6}{n+1}$	

<p>4) Find the point (x, y) on the unit circle that corresponds to the real number $t = \frac{11\pi}{3}$?</p> <p>(a) $\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$ (b) $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$</p> <p>(c) $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$ (d) $\left(\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$</p>	
<p>5) Evaluate $\sin\theta\sec\theta - \cos\theta$ if $\theta = \frac{4\pi}{3}$.</p>	
<p>6) Factor: $9x(3x - 5)^2 + (3x - 5)^3$</p> <p>(a) $(3x - 5)^3(9x + 1)$ (b) $(3x - 5)^2(6x - 5)$ (c) $(3x - 5)^2(12x - 5)$ (d) $(3x - 5)(30x^2 - 70)$</p>	
<p>7) Solve: $(x - 1)^2 = 3x + 5$</p> <p>(a) 1, 4 (b) $\frac{5 \pm \sqrt{39}}{2}$</p> <p>(c) $\frac{5 \pm \sqrt{41}}{2}$ (d) -1, 6</p>	

8) Multiply: $\frac{1}{x+y} \left(\frac{x}{y} + \frac{y}{x} \right)$

(a) $\frac{1}{y} + \frac{1}{x}$

(b) 1

(c) $\frac{x+y}{xy}$

(d) $\frac{x^2 + y^2}{xy(x+y)}$

9) Find the partial fraction decomposition

$$\frac{7x - 2}{3x^2 - x}$$

10) Find the first five terms of the sequence

$$a_n = (-1)^n(2n + 9).$$

(a) -11,-13,-15,-17,-19,...

(b) -11,13,-15,17,-19,...

(c) -11,2,-13,4,-15,...

(d) -11,-24,-39,-56,-75,...

11) Simplify: $\frac{\frac{1}{x-2} - \frac{1}{2}}{x-4}$

12) Evaluate the six trig functions of the real number $t = -\frac{9\pi}{4}$.

