

Math 201 Quiz 2A

September 4, 2019

Name: _____

Instructions: No calculators. Use your own scrap. Write your fully simplified answers in the space provided.

1. Expand and simplify $(\sqrt{x} + 3)^2 =$ _____

2. Factor each expression.

(a) $3x^4 + 10x^2 + 3 =$ _____ (b) $81a^4 - 16b^4 =$ _____

(c) $x^4 + 8x =$ _____

3. Complete the square: $3x^2 + 6x + 7 =$ _____

4. Solve the inequality (Write your solution in interval notation): $\frac{x+7}{2x+12} + \frac{6}{x^2-36} \leq 0$.

Answer: $x \in$ _____

5. If $f(x) = \sqrt{x}$, find, rationalize and simplify $\frac{f(x+h)-f(x)}{h} =$ _____

6. Find the domain. Write in interval notation: $g(x) = \frac{\sqrt{3-x}}{\sqrt{1-x^2}}$ D: _____

7. If $f(x) = 2x^2 - x + 4$ and $g(x) = 3x - 1$, find and simplify $f \circ g$ _____

8. Find all values of x such that $\cos 2x = \sin x$ for $0 \leq x \leq 2\pi$. $x =$ _____

9. Find the exact values.

(a) $\sec \frac{5\pi}{4} =$ _____ (b) $\cos \left(\frac{7\pi}{6}\right) =$ _____ (c) $\sin \frac{\pi}{3} =$ _____

10. Sketch the graphs of the given functions.

(a) $y = \sin x$

(b) $y = x^2 + 1$

(c) $3x - 5y = 30$

(d) $y = \sqrt{x-3}$