

Math 195 Quiz 2B

February 4, 2019

Name: _____

Instructions: No calculators! Answer all problems in the space provided! Do your rough work on scrap paper.

1. Expand and simplify:

(a) $(x - y)^2 =$ _____ (b) $(x + y)(w + z) =$ _____

(c) $a(x + 3) =$ _____ (d) $(\sqrt{x} + 2)^2 =$ _____


2. Factor: $3x^3 + 3x^2 - 6x =$ _____

3. Simplify: $\frac{\frac{6}{x+1} - \frac{4}{x+2}}{\frac{5}{x+2} + \frac{3}{x+1}} =$ _____

4. Simplify: $\frac{x^3 + 3x^2 - 4x - 12}{x - 2} =$ _____ (hint: factor the numerator)

5. Solve for x : $\frac{3}{2x} - \frac{5}{2x^2} = \frac{1}{x^3} \implies x =$ _____

6. Write the following statement in interval notation: " x is less than -3, or x is greater than 1 but less than or equal to 7". _____

7. Sketch the above statement on the number line: 

Bonus (after attempting the problems above, do these for extra credit):

1. Complete the rules:

(a) $a^x \cdot a^y =$ _____ (b) $\frac{x^a}{x^b} =$ _____ (c) $x^{a/b} =$ _____ (d) $x^{-m} =$ _____

2. Factor completely: $3x^{3/2} + 3x^{1/2} - 6x^{-1/2} =$ _____

3. Simplify: $\frac{\sqrt{a+h} - \sqrt{a}}{h} =$ _____