Math 195 Quiz 2A
February 4, 2019

Name: _____

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

1. Expand and simplify:

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

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

2. Factor: $2x^3 - 2x^2 - 4x =$ _____

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

4. Simplify: $\dfrac{x^3+2x^2-25x-50}{x-5} =$ _____ (hint: factor the numerator)

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

6. Write the following statement in interval notation: "x is less than -1, or x is greater than or equal to 2 but less than 5". _____

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

2. Factor completely: $2x^{3/2} + 4x^{1/2} - 6x^{-1/2} =$ _____

3. Simplify: $\dfrac{\sqrt{x+h}-\sqrt{x}}{h} =$ _____