

Math 195 Quiz 5B

February 25, 2019

Name: _____

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

1. Complete the following rules:

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

(e) $a^2 - b^2 =$ _____ (f) $a^3 - b^3 =$ _____

2. Solve the following equations:

(a) $\frac{2}{5}x - 1 = \frac{3}{10}x + 3 \Rightarrow x =$ _____ (b) $x^2 + 8x + 12 = 0 \Rightarrow x =$ _____

(c) $2x^2 + 7x + 3 = 0 \Rightarrow x =$ _____ (d) $x^3 - x^2 - 4x + 4 = 0 \Rightarrow x =$ _____

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

1. Solve the following equations:

(a) $\frac{3}{x+1} - \frac{1}{2} = \frac{1}{3x+3} \Rightarrow x =$ _____

(b) $\sqrt{2x+1} + 1 = x \Rightarrow x =$ _____

2. Solve the following inequality, write your answer in interval notation:

$x^2 - 3x - 18 \geq 0 \Rightarrow x \in$ _____