

MIDTERM 2 Answers

Math 110 (Doherty)
February 26, 2007

Name _____

1. (4 pts each) Simplify each expression. There should be no negative exponents in your answers.

(a) 4

(b) 3^{4b-4}

2. (6 pts each) Simplify each expression. There should be no negative exponents in your answers. You do not have to expand terms like 2^5 .

(a) $\frac{5a^7}{3b^6}$

(b) $\frac{y^3}{3^3x^9}$

3. (6 pts each) Solve by factoring. State the solution set.

(a) $\{-6, 1\}$

(b) $\{0, \frac{1}{6}, -2\}$

(c) $\{4, -4, -2\}$

4. (8 pts) What is the domain of $\frac{2y+3}{y^3-4y}$? State your answer in interval notation.

Set notation: $\{y \mid y \neq 2, -2, 0\}$

Interval notation: $(-\infty, -2) \cup (-2, 0) \cup (0, 2) \cup (2, \infty)$

5. (6 pts each) Perform the indicated operations, and express your answer in its simplest form (i.e., all fractions should be in lowest terms).

(a) $\frac{x(x+4)}{18(x-2)}$

(b) $\frac{-w-3}{(w+1)^2}$

6. (7 pts each) Simplify the following complex fraction; your answer should be in lowest terms:

$$\frac{7x + 3}{x - 6}$$