

Math 110 – Arithmetic Skills Test
Lecture 2 – September 10, 2010

Problem 1

Simplify and reduce to lowest terms the following expression:

$$\frac{-7/51}{3/12}$$

Answer:

A) $-\frac{7}{204}$ B) $-\frac{21}{51}$ C) $-\frac{7}{1836}$ D) $-\frac{7}{17}$ E) $-\frac{21}{204}$

Problem 2

Express as a single fraction and simplify the following expression:

$$\frac{1}{y} - \frac{1}{x}$$

Answer:

A) $\frac{0}{xy}$ B) $\frac{x-y}{xy}$ C) $\frac{y-x}{xy}$ D) $\frac{1}{xy}$ E) $\frac{1}{x-y}$

Problem 3

Simplify the following expression:

$$\left(\frac{x^{-4}}{x^{-7}}\right)^{-2}$$

Answer:

- A) x^{-6} B) x^6 C) x^{14} D) x^{22} E) x^{-28}

Problem 4

Simplify the following expression as much as possible, using rational exponent notation where appropriate:

$$\frac{2^{4/7}}{2^{3/2}}$$

Answer:

- A) $\frac{6}{7}$ B) $\frac{8}{21}$ C) $2^{1/5}$ D) $2^{-13/14}$ E) 2

Problem 5

Which of the following pairs of intervals and inequalities do not represent the same thing? (In other words, which one is not true?)

- A) $[-3, -2)$ is the same as $-2 > x \geq -3$
- B) $[1, 3]$ is the same as $1 \leq x \leq 3$
- C) $(-\infty, -1)$ is the same as $x < -1$
- D) $[2, 5] \cup (3, \infty)$ is the same as $x \geq 2$
- E) $(-2, \infty)$ is the same as $x < -2$

Answer:

- A) B) C) D) E)