

Name: _____

1. Simplify each of the following expressions. If the answer is a fraction, reduce it to lowest terms.

(a)
$$\frac{\frac{3}{5}}{\frac{11}{15} - \frac{3}{10}}$$

(b) $| -3 - 6 | - |7 - 9|$

2. Consider the following sets:

$$A = \{x \mid -3 \leq x \leq 7\}$$

$$B = \{x \mid x > 1\}$$

- (a) Sketch the graph of the intersection of A and B .
- (b) Write in interval notation $A \cup B$.
3. (a) Write .0000342 in scientific notation. _____
- (b) Write 6.39×10^{-3} in decimal notation. _____

4. Simplify the following:

(a) -6^2

(b) $(rs^2)^4(4r^3s^4)$

(c) $(81)^{3/4}$

(d) $27^{1/2}(135^{1/2})$

(e) $\frac{\sqrt{36}}{\sqrt{3}}$

5. (a) Simplify the expression $\sqrt[7]{a^2b^4}\sqrt[7]{a^4b^3}$

(b) Rationalize the denominator $\frac{2}{\sqrt[7]{x^5}}$