

Chapter 9 Review

1. Write down the properties of exponents and give an example of each using fractions as exponents. Be sure to include an example with negative exponents.

Perform the following operations:

2. $\frac{11}{4} - \frac{3}{4}$

3. $\frac{1}{4} + \frac{3}{4}$

4. $4 \cdot \frac{3}{4}$

5. $\frac{69^{\frac{11}{4}}}{69^{\frac{3}{4}}}$

6. $69^{\frac{1}{4}} \cdot 69^{\frac{3}{4}}$

7. $(69^4)^{\frac{3}{4}}$

8. What's different and what's similar about problems 2,3,4 compared to problems 5,6,7? Write a 2 page essay about this.

9. Show two different ways to write $27^{\frac{2}{3}}$. Which one is easier to use?

9. Under what circumstances will you not have a real number (i.e. no solution) when you use a radical (those square root things with different indexes)?

10. What does it mean to rationalize the denominator? Create a few examples illustrating your definition.

Don't use these for your example for above. Rationalize the denominator

11. $\frac{1}{3\sqrt{2}}$

12. $\sqrt{\frac{y}{y^2 + 4}}$

What the hell is a conjugate? Give an example using $\sqrt{x} + 8$ and $4 - \sqrt{2 - x}$. What do multiplying each of these by their conjugate give us (there's a shortcut)?