4.3 Rational Exponents

Goals

* Applying the exponent laws to expressions using rational numbers or variables as bases and rational exponents
* Solving problems that involve powers with rational exponents

Vocabulary

* None

Formulas

* All of the exponent laws

Notes

According to the product rule for powers.

(91/2) (91/2) =

You can also reverse this statement

Examples

1. Write each product or quotient as a power with a single exponent.
   1. (51/3)(55/3)
   2. (x5)(x-1/2)
   3. ( 3-3/4)/(30.25)
   4. 81.8/160.3
2. Write each expression as a power with a single, positive exponent. Then, evaluate when possible.
   1. (4x3)0.5
   2. [(x3)(x3/2)]1/2
   3. (34/16)-0.75
3. Food manufacurers usa a beneficial bacterium calleds *Lactobacillus bulgaricus* to make yogurt and cheese. The growth of 10000 bacteria can be modeled using the formula N= 10 000(2)h/42, where N is the number of bacteria and h is the number of hours.
   1. What does the value of 2 in the formula tell you
   2. How many bacteria are present after 42 hrs?
   3. How many more bacteria are present after 2 hours?
   4. How many bacteria are present after 105 hrs.

Pg. 180-183 # 1ace, 2acf, 4(all), 8 DO MORE IF YOU WANT EXTRA PRACTICE!