

NAME

Math 70
Quiz 3

(1) Simplify the following expressions:

(a) $-3(yz^2)^4$

(b) $(xy^3)^{-2}$

(c) $\frac{2 \times 10^5}{8 \times 10^2}$

(d) $(3 + 5)^3$ (Write without exponents)

(e) $\frac{xyz^{-4}}{4^{-2}z^2x^2}$

(f) $8^{\frac{2}{3}}$

(2) Give an explanation, based on the definition of an exponent why $x^0 = 1$ for all x values.

- (3) Since January 2000, the amount of data a company has collected (total data stored on their hard drives) has been tripling every year. If they started out with just 5 TB of data, at what point do they exceed 1000 TB of data. Write a function that describes the growth of their data. Draw a graph of the data.

Suppose in another situation, growth was linear and the company added 100 TB of data a year. Write an equation describing this situation and graph it on the same set of axis as the previous equation. Comment on the comparison.