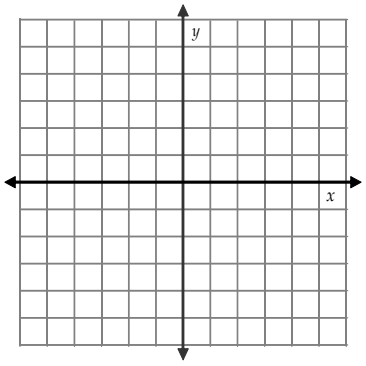
Math 3: Chapter 5 Practice Problems

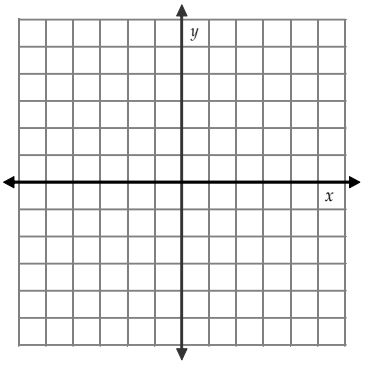
1. Simplify a. $\sqrt[3]{1000e^{15}}$ b. $\frac{24e^7}{36e^{10}}$

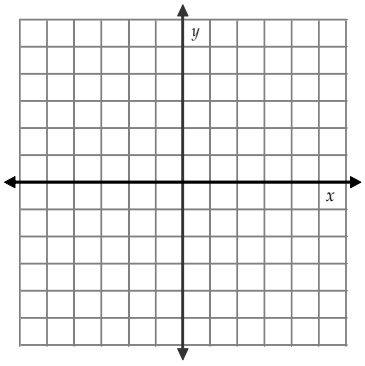
2. How much money will you have after 8 years if you invest $1000 at 5% interest compounded continuously?

3. Graph and describe any transformations, if any.

a. $y = e^x + 2$ b. $y = \log_6 x$ c. $y = \log_6(x + 2) - 3$




4. a. Write $2^{-4} = \frac{1}{16}$ in logarithmic form. b. Write $\log_9 3 = \frac{1}{2}$ in exponential form.

5. Evaluate without a calculator: a. $\log_3 27$ b. $\log_3 \frac{1}{9}$ c. $\log_8 4$

6. a. Expand $\log \frac{4a^2}{c^3}$ b. Condense $\log_3(x + 1) + \log_3(2x)$

7. Evaluate $\log_5 102$ using the change of base formula.

8. Solve and check for extraneous solutions.

a. $3^x = 14$ b. $3^x = 81^{x-2}$ c. $\log_2(x + 3) = 4$ d. $\log_2 x + \log_2(x - 7) = 3$

9. Find the exponential model $y = ab^x$ whose graph passes through (1,6) and (3,54).