

Exponential Functions Review

1. Write as a single power. **Express answers with positive exponents.**

a) $3^4 \times 3^8 \times 3$ b) $((-9)^2)^5$ c) $\frac{5^6}{5^4}$ d) $\frac{4^7 \times 4^5}{4^{12}}$

2. Evaluate each expression **without using a calculator.**

a) $125^{\frac{1}{3}}$ b) $16^{\frac{3}{2}}$ c) $(2x^2y)^2$ d) $9^{\frac{1}{2}}$

3. Simplify each of the following. **Answers must have positive exponents.**

a) $(x^4)(x^3)$ b) $(5x^8)(4x^{-1})$ c) $(x^2y)^4$

d) $a^3 \times a^{-1} \div a^4 \times a^3$ e) $\frac{(3x^4y^2)(15x^5y^3)}{9x^6y^7}$ f) $\frac{(5x^4y^3)(4xy^2)}{10x^3y}$

4. There are 10 000 yeast cells in a culture. The number of cells grows at a rate of 25% per day. How many cells will there be one week later?

5. Use the **compound interest** formula to determine the amount of the investment for each of the following.

a) \$1600 at 10% compounded semi annually for 7 years.

b) \$900 at 7% compounded monthly for 5 years.

6. Solve each **compound interest** problem **using the formula** then using the TVM Solver.

a) John has \$200 to invest. He wants it to amount to 250.00 in 10 years. At what rate, compounded annually, did he invest his money?

N= I%= PV= PMT= FV= C/Y= P/Y=

b) A savings account pays 10% compounded quarterly. In how many years will \$525 amount to \$550?

N= I%= PV= PMT= FV= C/Y= P/Y=