

1. Simplify. Answers should not have negative or zero exponents.

a.  $x^4 \cdot x^2 \cdot x$

b.  $(4x^3)^2$

c.  $(7m^7)(-3m^7)$

d.  $(x^3y^6)^4$

e.  $6^{-2}$

f.  $3x^0$

h.  $8x^{-3}$

h.  $\frac{7}{x^{-5}}$

i.  $19^{-1}$

j.  $\frac{m^4}{m^{-2}}$

k.  $\frac{x^{-6}}{4y^{-3}}$

i.  $\frac{2x^{-4}y^3}{8z^{-2}w^{-9}}$

2. Turn into scientific notation.

a. 377,900,000

b. 9,650

c. 0.000000126

3. Turn into standard notation.

a.  $3.9 \times 10^7$

b.  $6.02 \times 10^{-4}$

c.  $8.6781 \times 10^2$

4. Simplify. Answers should have no zero or negative exponents.

a.  $\frac{x^6}{x^8}$

b.  $\frac{4x^{27}}{12x^{22}}$

c.  $\left(\frac{x^4}{x}\right)^{-3}$

d.  $\left(\frac{x^3y}{x^2y^5}\right)^4$

e.  $\left(\frac{3m^{-4}}{n^5}\right)^2$

f.  $(4x^3)^0$

g.  $-(2x^5)^4$

h.  $(-2x^5)^4$

i.  $25^{\frac{1}{2}} + 8^{\frac{1}{3}}$

j.  $64^{\frac{1}{2}} - 27^{\frac{1}{3}}$

k.  $16^{\frac{3}{4}} + 8^{\frac{2}{3}}$

l.  $16^{\frac{3}{2}} - 27^{\frac{2}{3}}$

m.  $\sqrt{49x^{10}y^6}$

n.  $\sqrt[3]{m^9n^{15}}$

o.  $\sqrt[5]{x^{50}y^{20}}$

5. Simplify, add or subtract.

a.  $-6x^3 + 5x + 2x^3 + 8x^3$

b.  $7xy - 4x^2y - 2xy$

c.  $(3s^2 + 4s) - (-10s^2 + 6s)$

d.  $(7x^2 - 2x + 5) + (-3x^2 - 8x - 1)$

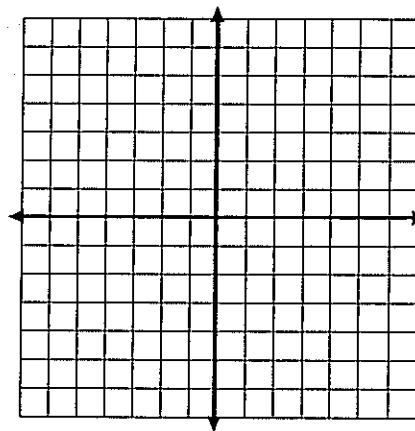
e.  $(5x^2 + 2x - 3) - (9x^2 - 4x - 1)$

f.  $(7z^2 + 4 - z) - (-5 + 3z^2)$

6. a. Graph the system of linear inequalities.

$$y > -2x - 1$$

$$5x - 2y \leq 4$$



b. Give one point that is a solution to the system above and one point that is not a solution.

solution:

not a solution:

7. Solve for x. Then graph the solutions, if applicable.

a.  $|x| = 5$

b.  $|x| < 3$

c.  $|x| > 4$