

1. Simplify and write the answers using positive exponents only.

a. $(27a^6)^{-\frac{2}{3}}$

b. $\frac{3x^{-2}}{(2x^{-5}y)^{-3}}$

c. $\left(x^{\frac{1}{2}} + y^{\frac{1}{2}}\right)^2$

2. Solve the equation.

$$x^2 - 3x = 10$$

3. Solve the inequality.

Write your answer in interval notation.

$$2(x + 4) \geq 5x - 4$$

4. For the function $f(x) = 3x^2 - 2x - 15$ form and simplify completely:

$$\frac{f(3+h) - f(3)}{h}$$

5. Find a common denominator and simplify: $\frac{x}{x^2 - 16} - \frac{x + 4}{x^2 - 4x}$