

MATH 156: Precalculus
Fall 2015
Worksheet §1.4: Rational Expressions

1. Simplify $\frac{y^2 + y}{y^2 - 1}$

2. Divide and simplify: $\frac{x^2 - x - 6}{x^2 + 2x} \div \frac{x^3 + x^2}{x^2 - 2x - 3}$

3. Subtract and simplify: $\frac{x}{x - 4} - \frac{3}{x + 6}$

4. Simplify the compound expression: $\frac{\frac{x^3}{x+1}}{\frac{x}{x^2+2x+1}}$

5. Simplify the compound expression: $\frac{\frac{x}{y} - \frac{y}{x}}{\frac{1}{x^2} + \frac{1}{y^2}}$

6. Simplify $\frac{2x(x+6)^4 - x^2(4)(x+6)^3}{(x+6)^8}$.

7. Simplify $\frac{3(1+x)^{1/3} - x(1+x)^{-2/3}}{(1+x)^{2/3}}$ (You are an algebra wizard, if you get this one right on your first try!)