

Name: _____

Rational Expressions

Exercise 1: Find all excluded values of each rational expression:

1) $\frac{1-x}{4}$

2) $\frac{1}{x}$

3) $\frac{x-3}{x+1}$

4) $\frac{-4x}{x-2}$

5) $\frac{1}{x-3}$

6) $\frac{x}{x+5}$

7) $\frac{1-x}{x}$

8) $\frac{x^2+6x-7}{x+1}$

9) $\frac{1}{x^3-2x^2}$

10) $\frac{-4}{x^2-x-30}$

11) $\frac{3}{x^2-9}$

12) $\frac{1}{x^2-4x-12}$

13) $\frac{5x}{x^2+3x-18}$

14) $\frac{1}{x^3-3x^2+3x-1}$

Exercise 2: Simplify the following rational expressions. If the expression cannot be simplified any further, then simply rewrite the original expression. Mention all excluded values

1) $\frac{x+3}{x^2+9}$

2) $\frac{a^2+b^2}{a+b}$

3) $\frac{x^2-16}{x-4}$

4) $\frac{49-c^2}{c^2-9c+18}$

5) $\frac{x^2-11x+10}{100-x^2}$

6) $\frac{49a^4b^9}{56a^7b^{10}}$

7) $\frac{60x^2y^5}{48x^5y^3}$

8) $\frac{5x^3(x+y)^7}{10x^5(x+y)^3}$

9) $\frac{m^2-m-20}{m^2+m-30}$

10) $\frac{x^2-2x-15}{x^2+10x+21}$

11) $\frac{x^2+5x+6}{x^2+x-12}$

12) $\frac{8c^6(c-d)^2}{12c(c-d)^3}$

13) $\frac{3y-2}{2-3y}$

14) $\frac{x^2+1}{-1-x^2}$

15) $\frac{x+3}{x-3}$

16) $\frac{x-y}{y-x}$