

Name: _____

Rational Expressions

- 1) Simplify the following rational expressions. If the expression cannot be simplified any further, then simply rewrite the original expression. Mention all the excluded values.

1)
$$\frac{49a^4b^9}{56a^7b^{10}}$$

2)
$$\frac{c-d}{d-c}$$

3)
$$\frac{2(a-b)(c-d)}{6(b-a)}$$

4)
$$\frac{12(x-y)(w-z)}{6(z-w)(x-y)}$$

5)
$$\frac{4x+8}{x+2}$$

6)
$$\frac{x-3}{5x-15}$$

7)
$$\frac{x+5}{x^2-25}$$

8)
$$\frac{x^2+7x+12}{x^2-7x-30}$$

9)
$$\frac{x^2-8x+12}{x^2-13x+42}$$

10)
$$\frac{x^2-7x+10}{x^2+7x+10}$$

11)
$$\frac{x^2-36}{x^2+12x+36}$$

12)
$$\frac{x^2-8x+16}{x^2-16}$$

1)
$$\frac{9x+36}{x^2+4x}$$

2)
$$\frac{7x^2-14x}{x-2}$$

3)
$$\frac{10x^2-30x}{5x^2+10x}$$

4)
$$\frac{6x^2-8x}{9x^3-12x^2}$$

5)
$$\frac{x^2+7x+6}{8x^2+8x}$$

6)
$$\frac{4x^2-20x}{x^2-4x-5}$$

7)
$$\frac{6x^2+24x+18}{4x^2-8x-60}$$

8)
$$\frac{5x^2+10x-40}{10x^2-30x+20}$$

9)
$$\frac{4x^2+17x+15}{5x^2+13x-6}$$

10)
$$\frac{4x^2-8x-21}{8x^2-24x-14}$$

11)
$$\frac{6x^2-5x-4}{10x^2+9x+2}$$

12)
$$\frac{15x^2+4x-4}{5x^2-22x+8}$$

13)
$$\frac{8x^2+30x+7}{16x^2-1}$$

14)
$$\frac{9x^2-25}{6x^2-13x+5}$$

15)
$$\frac{m^3+m^2+m+1}{m^3+m+m^2n+n}$$

16)
$$\frac{ax-ay+bx-by}{ax-ay+2x-2y}$$

17)
$$\frac{xy-3x+2y-6}{yz-3z-5y+15}$$

18)
$$\frac{ab-5a+2b-10}{a^2b+4b-5a^2-20}$$

19)
$$\frac{x^3-8}{x-2}$$

20)
$$\frac{x+5}{x^3+125}$$

21)
$$\frac{x^3+27}{x^2-3x+9}$$

22)
$$\frac{x^3-1}{x^2+x+1}$$