

Name: _____

Operations with Rational Functions

Exercise 1: Divide the following rational expressions and simplify. No answers should contain negative exponents.

1) $\frac{x}{y^2z^7} \div \frac{x^4z^3}{y^5}$

2) $\frac{a^3c^7}{b^4} \div \frac{b^5c^9}{a^2}$

3) $\frac{a^5b^6}{c^2d^5} \div a^5d^2$

4) $x^4z^5 \div \frac{x^3y^2}{w^6z}$

5) $\frac{x+4}{x-2} \div \frac{x-3}{x-2}$

6) $\frac{x+3}{x-1} \div \frac{x-5}{x-1}$

7) $\frac{7x+7}{21x} \div \frac{x^2-1}{3x}$

8) $\frac{7}{x^2-9} \div \frac{x+4}{x+3}$

9) $\frac{x}{x^2+4} \div \frac{5x}{x+2}$

10) $\frac{x^2-1}{x+6} \div \frac{x-1}{3x+18}$

11) $\frac{-5}{16-x^2} \div \frac{10}{x-4}$

12) $\frac{x^2-4}{x+5} \div \frac{2-x}{25-x^2}$

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

14) $\frac{4x^2-9}{x^2-10x+25} \div \frac{2x-3}{x-5}$

15) $\frac{x^2-3x-10}{x^2-3x-28} \div \frac{x^2-x-6}{x^2+x-12}$

16) $\frac{x^2+4x+4}{x^2-6x-16} \div \frac{x^2-8x-20}{x^2-9x+8}$

17) $\frac{6x^2+x-1}{6x^2+5x+1} \div \frac{3x^2+2x-1}{3x^2+4x+1}$

18) $\frac{10x^2-17x+6}{5x^2+4x-12} \div \frac{6x^2+5x-4}{3x^2-2x-8}$

19) $\frac{am-an+bm-bn}{am+an-bm-bn} \div \frac{am-an-3bm+3bn}{am+an-3bm-3bn}$

20) $\frac{cx-2dx+cy-2dy}{x^2+x-3xy-3y} \div \frac{cx+cy+5dx+5dy}{cx+5dx+c+5d}$