

3 ♡ Fractions

Student ID No.										Name	
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1 Simplify the following expressions.

a) $\frac{6bx}{4a^2x^2} =$

b) $\frac{\frac{c}{ab}}{ab^2c} =$

c) $\left(-\frac{2xy^2}{a^2}\right) \div \left(-\frac{ay}{4x^2}\right) =$

d) $\frac{3x}{6x^2 + x} =$

e) $\frac{x^2 - 5x + 6}{x + 3} \times \frac{x^2 + 3x}{x^2 - 6x + 9}$
 $=$

f) $\frac{x^2 + x - 6}{x} \div \frac{x^2 - 4}{x^2} =$

g) $\left(1 + \frac{b}{x}\right) \div \left(\frac{a}{x} - 1\right) =$

h) $\frac{1}{c - \frac{1}{c + \frac{1}{c}}} =$

2 For each of the following pairs of polynomials, factor the polynomials and find the greatest common divisor (GCD) and the least common multiple (LCM).

a) $\begin{cases} x^2 + 3x + 2 = \\ 2x^2 + x - 1 = \end{cases}$
 $\begin{cases} \text{GCD} = \\ \text{LCM} = \end{cases}$

b) $\begin{cases} x^2 - x = \\ x^2 + 2x - 3 = \\ x^2 - 2x + 1 = \end{cases}$
 $\begin{cases} \text{GCD} = \\ \text{LCM} = \end{cases}$

3 Simplify the following expressions.

a) $\frac{x + 2}{x - 2} + \frac{4}{2 - x} =$

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

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

d) $\frac{a - 1}{a} - \frac{a}{a - 1} + \frac{1}{a - 1}$
 $=$

e) $\frac{1}{a^2 - ab} + \frac{1}{b^2 - ab}$
 $=$

f) $\frac{3x - 4}{x^2 - 3x + 2} + \frac{x - 1}{x^2 - x - 1}$
 $=$