Name: _____

Adding & Subtracting Rational Expressions

1) Rewrite each of the following expressions, carefully showing the main steps of your argument, and recording any values of the variables that are excluded.

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

   2) $\frac{1}{x^2+xy}+\frac{1}{y^2+xy}$

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

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

2) Simplify

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

   2) $\frac{c}{ab}+\frac{a}{bc}+\frac{b}{ac}$

   3) $\frac{5}{x}+\frac{3}{x(x+1)}$

   4) $\frac{(x+y)^2}{x^2}-\frac{(x-y)^2}{y^2}$

3) Find each sum or difference in simplest form

1) $\frac{r}{8}-\frac{r}{3}$

2) $\frac{2p}{6}-\frac{p}{5}$

3) $-\frac{r}{4}+\frac{3r}{7}$

4) $\frac{6t}{9}-\frac{t}{3}$

5) $\frac{5x}{x-1}-\frac{7}{x}$

6) $\frac{6y+1}{2y+1}-\frac{1}{4y+2}$

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

8) $\frac{4}{b^2-16}+\frac{8}{b+4}$

9) $\frac{2r}{3+r}-\frac{9}{r+3}$

10) $\frac{16}{m-5}-\frac{10}{5-m}$

11) $\frac{2p}{3+p}-\frac{p}{3+p}$

12) $\frac{-2x-4}{x+7}-\frac{2x+11}{x+7}$

13) $\frac{12t-1}{t+1}-\frac{3t-4}{3t-3}$

4) Find an expression for the perimeter of the isosceles triangle.