# Unit VI – Second Degree Relations and Higher - Algebraic Fractions
## Part A – Operations
## Lesson 4 – Addition and Subtraction

For each of the following, find all sums and differences, simplify your result, and note any restricted values.

1. $\frac{3a}{a^2-16}-\frac{a+8}{a^2-16}$

2. $\frac{5}{4x-16}+\frac{7}{2x-8}+\frac{1}{3x-12}$

3. $\frac{3a-39}{a^2-7a+10}+\frac{3}{2-a}$

4. $\frac{3y-5}{2y-6}-\frac{4y-2}{5y-15}$

5. $\frac{4a}{a^2-7a+10}-\frac{2a+10}{a^2-7a+10}$

6. $\frac{^-9b}{b^2-3b-18}-\frac{b}{6-b}$

7. $\frac{3x-10}{x^2-8x+12}-\frac{2}{x-6}$

8. $\frac{^-9y-3}{y^2-11y+18}-\frac{y+3}{y-9}$

9. $\frac{5}{xy+3y-2x-6}+\frac{4}{x+3}-\frac{2}{2-y}$

10. $\frac{2a-3}{3a^2-13a-10}+\frac{2a+1}{5-a}+\frac{1}{3a+2}$

# EXTRA PRACTICE — Answer Key



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## Part A – Operations
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For each of the following, find all sums and differences, simplify your result, and note any restricted values.

1. $\frac{2}{a+4}$
   Restricted values: $a \neq 4$, $a \neq {}^{-}4$

2. $\frac{61}{12(x-4)}$
   Restricted values: $x \neq 4$

3. $\frac{{}^{-}24}{(a-2)(a-5)}$
   Restricted values: $a \neq 2$, $a \neq 5$

4. $\frac{7}{10}$
   Restricted values: $y \neq 3$

5. $\frac{2}{a-2}$
   Restricted values: $a \neq 2$, $a \neq 5$

6. $\frac{b}{b+3}$
   Restricted values: $b \neq 6$, $b \neq {}^{-}3$

7. $\frac{1}{x-2}$
   Restricted values: $x \neq 6$, $x \neq 2$

8. $\frac{y+1}{y-2}$
   Restricted values: $y \neq 2$, $y \neq 9$

9. $\frac{4y+2x+3}{(x+3)(y-2)}$
   Restricted values: $x \neq {}^{-}3$, $y \neq 2$

10. $\frac{2(3a^2+5a-3)}{(3a+2)(a-5)}$
    Restricted values: $a \neq {}^{-}\frac{2}{3}$, $a \neq 5$