

Name _____

Date _____

Advanced Algebra

Unit 5 Polynomial Functions Assignment #16

Learning Target: I can add complex fractions.**You will be able to use these answers (problems 1-6) on your next homework!**

Directions: Add the following fractions. You must get common denominators

1) $\frac{x+2}{x+4} + \frac{1}{x}$

$$\frac{x(x+2)}{x(x+4)} + \frac{(x+4)}{x(x+4)}$$

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

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

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

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

$$\frac{x^2 + 3x + x + 5}{x(x+5)}$$

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

3) $\frac{x+6}{x+7} + \frac{1}{x}$

$$\frac{x(x+6)}{x(x+7)} + \frac{(x+7)}{x(x+7)}$$

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

$$\frac{x^2 + 7x + 7}{x(x+7)}$$

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

$$\frac{x(x+5)}{x(x+2)} + \frac{(x+2)}{x(x+2)}$$

$$\frac{x^2 + 5x + x + 2}{x(x+2)}$$

$$\frac{x^2 + 6x + 2}{x(x+2)}$$

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

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

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

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

6) $\frac{4x+1}{x+3} + \frac{8}{x}$

$$\frac{x(4x+1)}{x(x+3)} + \frac{8(x+3)}{x(x+3)}$$

$$\frac{4x^2 + x + 8x + 24}{x(x+3)}$$

$$\frac{4x^2 + 9x + 24}{x(x+3)}$$

* Common Denominator is $6k^2$

$$7) \frac{1}{6k^2} + \frac{1}{3k}$$

Multiply top & bottom by $2k$

$$\frac{1}{6k^2} + \frac{2k}{6k^2}$$

$$\frac{2k+1}{6k^2}$$

* Common Denominator is $(n-8)(n+8)$

$$8) \frac{1}{(n-8)} + \frac{1}{(n+8)}$$

$$\frac{n+8}{(n-8)(n+8)} + \frac{(n-8)}{(n-8)(n+8)}$$

$$\frac{2n}{(n-8)(n+8)}$$

$$9) \frac{2}{(a-4)} + \frac{4}{(3a+1)}$$

Common denominator is $(a-4)(3a+1)$

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

$$\frac{6a+2+4a-16}{(a-4)(3a+1)} = \frac{10a-14}{(a-4)(3a+1)}$$

$$11) \frac{3}{(a-2)} + \frac{-5}{(a-10)}$$

$$\frac{3(a-10)}{(a-2)(a-10)} + \frac{-5(a-2)}{(a-2)(a-10)}$$

$$\frac{3a-30}{(a-2)(a-10)} + \frac{-5a+10}{(a-2)(a-10)}$$

$$\frac{-2a-20}{(a-2)(a-10)}$$

$$10) \frac{5}{(m+3)} + \frac{-5}{(m-1)}$$

$$\frac{5(m-1)}{(m-1)(m+3)} + \frac{-5(m+3)}{(m+3)(m-1)}$$

$$\frac{5m-5}{(m-1)(m+3)} + \frac{-5m-15}{(m+3)(m-1)}$$

$$\frac{-20}{(m-1)(m+3)}$$