

Precalculus

8-04 Partial Fractions

- To split a rational function into smaller _____

$$\frac{x+8}{x^2+6x+8} = \frac{?}{x+2} + \frac{?}{x+4}$$

To Find Partial Fractions

- _____ the denominator.
- For each _____ factor of the denominator are in the form

$$\frac{A}{px+q} + \frac{B}{(px+q)^2} + \dots$$

- For each _____ factor of the denominator are in the form

$$\frac{Ax+B}{ax^2+bx+c} + \frac{Cx+D}{(ax^2+bx+c)^2} + \dots$$

- _____ for A, B, C , etc.
- Multiply by the _____
 - Choose _____ values of x to find A, B, C , etc.
 - Or create a _____ of linear equations based on the _____ of x .

Find the partial fractions $\frac{x+8}{x^2+6x+8}$

$$\frac{3x^2 - x + 5}{x^3 - 2x^2 + x}$$

$$\frac{6x^3 + 16x}{(x^2 + 3)^2}$$