

DATE: _____

Partial Fractions**Find the partial fraction decomposition for each rational expression.**

1. $\frac{6x}{x^2-9}$

2. $\frac{-8}{x^2-4x}$

Answer: $\frac{6x}{x^2-9} = \frac{3}{x+3} + \frac{3}{x-3}$

Answer: $\frac{-8}{x^2-4x} = \frac{2}{x} + \frac{-2}{x-4}$

3. $\frac{x-16}{x^2+x-2}$

4. $\frac{-2x-14}{x^2+6x+8}$

Answer: $\frac{x-16}{x^2+x-2} = \frac{6}{x+2} + \frac{-5}{x-1}$

Answer: $\frac{-2x-14}{x^2+x+8} = \frac{3}{x+4} + \frac{-5}{x+2}$

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

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

Answer: $\frac{3x^2+2x+2}{(x^2+1)^2} = \frac{3}{x^2+1} + \frac{2x-1}{(x^2+1)^2}$

Answer: $\frac{x^2-2x+1}{(x-2)^3} = \frac{1}{x-2} + \frac{2}{(x-2)^2} + \frac{1}{(x-2)^3}$