

Partial Fraction Decomposition

$$\frac{-7x+13}{x^2-5x-14} = \frac{A}{(x-7)} + \frac{B}{(x+2)}$$

$$-7x+13 = A(x+2) + B(x-7)$$

$$x = -2 \text{ \& } x = 7$$

$$-7(-2)+13 = A((-2)+2) + B((-2)-7)$$

$$14+13 = A(0) + B(-9)$$

$$\frac{27}{-9} = \frac{-9B}{-9}$$

$$-3 = B$$

$$-7(7)+13 = A((7)+2) + B((7)-7)$$

$$-49+13 = A(9) + B(0)$$

$$\frac{-36}{9} = \frac{9A}{9}$$

$$-4 = A$$

$$= \frac{A}{x-7} + \frac{B}{x+2}$$

$$= \frac{-4}{x-7} + \frac{-3}{x+2}$$

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