

HW Supplement for Partial fractions

Please attach this with your HW4!

1. Do the given operations.

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

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

$$(c) -\frac{1}{2x-1} + \frac{x-2}{x^2+1}$$

2. Find the partial-fraction decomposition of the following.

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

$$(b) \frac{x^2-2x-9}{x(x+3)^2}$$

$$(c) \frac{x^2-5x+1}{(2x-1)(x^2+1)}$$

3. Evaluate the integral given below. Use #2 for these.

(a) $\int \frac{x+5}{x^2+x-2} dx$

(b) $\int \frac{x^2-2x-9}{x(x+3)^2} dx$

(c) $\int \frac{x^2-5x+1}{(2x-1)(x^2+1)} dx$