

Partial Fractions- HW Problems

Evaluate the following integrals.

1. $\int \frac{x^3}{1+x} dx$

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

3. $\int \frac{3y}{(y-1)(2y+1)} dy$

4. $\int \frac{3x+4}{(1+x)^2} dx$

5. $\int \frac{2x^2+3x+4}{x^3+2x^2} dx$

6. $\int \frac{4x^2-3x+2}{4x^2-4x+3} dx$

7. $\int \frac{x^2+x}{(x^2+1)(x-1)} dx$

8. $\int \frac{3x^2-1}{x^3-x} dx$

9. $\int \frac{4x^2+x+2}{(x^2+1)^2} dx$

10. $\int \frac{e^{2x}}{e^{2x}+4e^x+3} dx$ (Hint: Let $u = e^x$).