

- Please see the course webpage for the answer key.

1. Compute $\int \frac{x^4 - 2x^3 + 4x^2 - 17x + 10}{x^3 - 3x^2 + 2x - 6} dx = \int \frac{x^4 - 2x^3 + 4x^2 - 17x + 10}{(x - 3)(x^2 + 2)} dx$.

2. Compute $\int \frac{x + 7}{x^2 + 6x + 14} dx$.

3. Compute $\int_2^{\infty} \frac{x}{e^{3x}} dx$.

4. Compute $\int_3^{\infty} \frac{7}{x^2 + 3x - 10} dx$.

5. Compute $\int_8^{\infty} \frac{1}{x^2 - 10x + 28} dx$.