

- Please see the course webpage for the answer key.

Compute each of the following Integrals.

1. $\int \frac{1}{x^2 - 8x + 25} dx$

2. $\int \frac{10}{x^2 - 8x - 9} dx$

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

4. $\int \frac{5x^2 - 13x + 16}{x^3 - 3x^2 + 2x - 6} dx = \int \frac{5x^2 - 13x + 16}{(x - 3)(x^2 + 2)} dx$

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

6. $\int_1^{\infty} \frac{e^{\frac{1}{x}}}{x^2} dx$

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

8. $\int_{-\infty}^0 \frac{6}{x^2 + 2x + 4} dx$

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

10. $\int_e^{\infty} \frac{\ln x}{x^2} dx$