Calculus

Name_____

# Fundamental Theorem of Calculus

Date_____ Period____

**For each problem, find the area under the curve over the given interval.**

1) $y = x^2 - 8x + 18;\ [3, 7]$

2) $y = \sqrt{x};\ [4, 6]$

3) $y = \frac{1}{x};\ [3, 7]$

**Evaluate each definite integral.**

4) $\int_{-6}^{-3} (x^2 + 8x + 12)\, dx$

5) $\int_{2}^{5} \left(\frac{x^2}{2} - 2x + 1\right) dx$

6) $\int_{-6}^{-3} 3x^{\frac{1}{3}}\, dx$

7) $\int_{-2}^{1} (-x^5 + 4x^3 - 3x - 3)\, dx$

8) $\int_{-5}^{-2} -\frac{3}{x^2}\, dx$

9) $\int_{0}^{1} (-x^5 + 2x^3 - x + 3)\, dx$