BC CALCULUS PRACTICE 8.5 **Name:** _____ **Period** _____

Aisle _____

pg. 543; 9, 13, 21, 27, 31, 35, 42

Optional: 17

Show all necessary work neatly.

Evaluate the integrals.

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

13. $\int \frac{2x^2 - 9x - 9}{x^3 - 9x}\, dx$

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

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

31.

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

35. Find the volume of the solid generated when the region enclosed by $y = x^2/(9 - x^2)$, $y = 0$, $x = 0$, and $x = 2$ is revolved about the x-axis.

42. Use partial fractions to derive the integration formula

$$\int \frac{1}{a^2 - x^2} dx = \frac{1}{2a} \ln \left| \frac{a + x}{a - x} \right| + C$$

Optional:

17. $\displaystyle\int \frac{3x^2 - 10}{x^2 - 4x + 4} dx$
