

## 6.12 Linear Partial Fractions

Calculus

Name: \_\_\_\_\_

**CA #1**

**Evaluate using partial fractions.**

1.  $\int \frac{1}{x^2-36} dx$

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

3.  $\int \frac{3}{x(x+3)} dx$

4.  $\int_0^1 \frac{x-1}{x^2-x-2} dx$

$$5. \int \frac{1}{(2x+1)(1-x)} dx$$

$$6. \int \frac{1}{(x+1)(x+2)(x+3)} dx$$

Answers to 6.12 CA #1

|  |   |   |
|--|---|---|
| 1. $\frac{1}{12} \ln \left  \frac{x-6}{x+6} \right  + C$ | 2. $\frac{1}{5} \ln  2x + 1  + \frac{9}{5} \ln  x - 2  + C$ | 3. $\ln \left  \frac{x}{x+3} \right  + C$                 |
| 4. $\frac{1}{3} \ln 2$                                   | 5. $\frac{1}{3} \ln \left  \frac{2x+1}{1-x} \right  + C$    | 6. $\ln \left  \frac{\sqrt{(x+1)(x+3)}}{x+2} \right  + C$ |