6.8 Indefinite Integrals

CA #2

Calculus Name: _____

Find the following indefinite integrals.

1. $\int \left(\frac{1}{x} - 4^x\right) dx$

2. $\int x\left(e^2 - \sqrt{x}\right) dx$

3. $\int \left(\frac{x^2-2x+4}{x}\right) dx$

4. $\int \left(\frac{x^3+x-7}{x}\right) dx$

5. $\int \sqrt{x}\left(x - \frac{3}{x}\right) dx$

6. $\int \left(\frac{8}{x} - \frac{1}{x^2} + e^x\right) dx$

Find the function that satisfies the given conditions.

7. $h'(t) = 6t^2 - 8t - 7$ and $h(2) = -15$

8. $\frac{dy}{dx} = 3e^x - \cos x$ and $y(0) = 4$

9. $f''(x) = 6x^2 - \sin x$ and $f'(0) = 0$ and $f(0) = 2$

Answers to 6.8 CA #2

1. $\ln\lvert x\rvert - \frac{4^x}{\ln 4} + C$	2. $\frac{e^2}{2}x^2 - \frac{2}{5}x^{\frac{5}{2}} + C$	3. $\frac{1}{2}x^2 - 2x + 4\ln\lvert x\rvert + C$
4. $\frac{1}{3}x^3 + x - 7\ln\lvert x\rvert + C$	5. $\frac{2}{5}x^{\frac{5}{2}} - 6\sqrt{x} + C$	6. $8\ln\lvert x\rvert + \frac{1}{x} + e^x + C$
7. $h(t) = 2t^3 - 4t^2 - 7t - 1$	8. $3e^x - \sin x + 1$	9. $f(x) = \frac{1}{2}x^4 + \sin x - x + 2$