CALCULUS BC CH.8 WS **Name**_____ Per._____

Determine its divergence or convergence. Evaluate the integral if it converges.

1) $\int_{-2}^{0} \frac{1}{x^2}\,dx =$

2) $\int_{-\infty}^{2} e^x\,dx =$

Evaluate each integral.

3) $\int e^{4x}\cos 2x\;dx =$

4) $\int \frac{5x+8}{x^2+8x+15}\,dx =$

5) $\int x^2 e^{3x}\,dx =$

6) $\int \frac{x^2-3}{x(x+2)^2}\,dx =$

Evaluate each limit #7 - 10

7) $\lim_{x\to 1} \dfrac{7^x - 7}{10x^2 - 10} =$

8) $\lim_{x\to \infty} \dfrac{8x^2}{9x^2 + 3x + 6} =$

9) $\lim_{x\to 0^+} \left(e^x + 10x\right)^{8/x} =$

10) $\lim_{x\to 2^+} \dfrac{13x - 18}{x^2 - 4} - \dfrac{x}{x - 2} =$

11) $\int \dfrac{18x - 1}{9x^2 + 16}\, dx =$

12) $\int \dfrac{2x}{x^2 + 12x + 61}\, dx =$

13) $\int \dfrac{9}{x^2 + 12x + 61}\, dx =$

14) $\int \dfrac{4x^2 + 2}{x\left(x^2 + 3\right)}\, dx =$