

Math 1496 Calc 1 - Homework #10

Pg. 341-2, #15, 19, 23, 39, 47, 65, 73, 77, 79 and 83,

Pg. 352-3, #15, 19, 29, 35, 43, 47, 49, 51, 59 and 61.

Pg. 341-2

Find the indicated antiderivative

$$\#15 \int x^2(2x^3 - 1)^4 dx$$

$$\#19 \int \frac{7x}{(1-x^2)^3} dx$$

$$\#23 \int \frac{7x}{\sqrt{1-x^2}} dx$$

$$\#39 \int \frac{1}{\theta^2} \cos \frac{1}{\theta} d\theta$$

$$\#47 \int e^x(e^x + 1)^2 dx$$

$$\#65 \int x\sqrt{x+6} dx$$

$$\#73 \int_{-1}^1 x(x^2 + 1)^3 dx$$

$$\#77 \int_0^4 \frac{1}{\sqrt{2x+1}} dx$$

$$\#79 \int_1^9 \frac{1}{\sqrt{x}(1+\sqrt{x})^2} dx$$

$$\#83 \int_1^3 \frac{e^{3/x}}{x^2} dx$$

Pg. 352

Find the indicated limits

$$\#15 \lim_{x \rightarrow 3} \frac{x^2 - 2x - 3}{x - 3}$$

$$\#19 \lim_{x \rightarrow 0^+} \frac{e^x - (1+x)}{x^3}$$

$$\#29 \lim_{x \rightarrow \infty} \frac{x^3}{e^{x/2}}$$

$$\#35 \lim_{x \rightarrow \infty} \frac{\ln x}{x^2}$$

$$\#43 \lim_{x \rightarrow \infty} x \ln x$$

$$\#47 \lim_{x \rightarrow 0^+} (e^x + x)^{2/x}$$

$$\#49 \lim_{x \rightarrow \infty} x^{1/x}$$

$$\#51 \lim_{x \rightarrow 0^+} (1+x)^{1/x}$$

$$\#59 \lim_{x \rightarrow 1^+} \left(\frac{3}{\ln x} - \frac{2}{x-1} \right)$$

$$\#61 \lim_{x \rightarrow \infty} (e^x - x)$$