

Calculus Review Homework #5 due Thursday 10/4/2012

- 1.) Differentiate (a) $y = \text{Arcsin}(2x-3)$, and (b) $y = \text{Arctan}(3x^2)$.
- 2) Evaluate (a) $\text{Arccos}(1/2)$, (b) $\text{Arctan}(-\sqrt{3})$, and $\text{Arcsec}(-2)$
- 3) Evaluate the antiderivative
- (a) $\int \frac{1}{\sqrt[3]{x^2}} dx$ (b) $\int \frac{8x^2}{(x^3+2)^3} dx$
- (c) $\int x^2 \sqrt{x+1} dx$ (d) $\int \frac{(x+1)}{\sqrt{x^2+2x-4}} dx$
- 4) Evaluate the definite integral
- (a) $\int_{-1}^2 (1-t^2) t dt$ (b) $\int_{1/2}^3 \sqrt{2x+3} x dx$
- 5) Differentiate (a) $y = x \ln x - x$ (b) $\ln \left[\frac{x^4}{(3x-4)^2} \right]$
- 6) Evaluate $\lim_{h \rightarrow 0} \frac{1}{h} \ln \left[\frac{2+h}{2} \right]$
- 7) Differentiate: (a) $y = e^{\tan 3x}$ (b) $y = e^{e^x}$
- 8) Find the antiderivative $\int 3^{2x} dx$