CALCULUS II – Worksheet #5 **Test Tomorrow!**

Questions	Answers
1. $\int_4^{\infty} \frac{1}{x^3}\, dx =$	$\frac{1}{32}$
2. $\int_{-2}^{3} \frac{1}{x^4}\, dx =$	Diverges
3. $\int \frac{dx}{\sqrt{36 - x^2}} =$	$\sin^{-1}\frac{x}{6} + C$
4. $\int \frac{dx}{x^2 - 2x - 3} =$	$\frac{1}{4}\ln\left\lvert\frac{x-3}{x+1}\right\rvert + C$
5. $\int \frac{dx}{\sqrt{16 + x^2}} =$	$\ln\left\lvert\frac{\sqrt{16+x^2}}{4} + \frac{x}{4}\right\rvert + C$ or $\ln\left\lvert\frac{\sqrt{16+x^2}+x}{4}\right\rvert + C$ or $\ln\left\lvert\sqrt{16+x^2}+x\right\rvert + C$
6. $\int_0^1 \sqrt{1 - x^2}\, dx =$	$\frac{\pi}{4}$
7. $\lim_{x\to\infty}(1+3e^x)^{1/x} =$	e
8. $\int e^x \cos x\, dx =$	$\frac{1}{2}e^x \sin x + \frac{1}{2}e^x \cos x + C$