CALCULUS, Fourth Edition, Hughes-Hallett, Gleason, McCallum, et al.

Chapter 6:

Section	Suggested Problems
6.1	1, 3, 7-13 odd, 15, 16, 17, 20, 25.
6.2	1, 2, 5-9 odd, 13, 15, 19, 23, 27, 31, 37, 39, 49-55 odd, 61, 66, 68, 73, 77, 79, 80, 81, 83, 85.
6.3	1-7 odd, 11, 13, 21, 22, 23.
6.4	2, 3, 6-8, 11, 13, 15, 17, 19, 21, 25, 27.
6.5	1, 3, 5, 9
Review	45, 46, 47, 50, 59, 60, 69, 70

In this class it is essential that you keep reviewing the derivatives of the elementary functions studied in Math 124. But, in this course we are interested in antiderivatives or indefinite integrals. Below is a short table of the some important derivatives learned in Math 124 and the same formulas written as indefinite integrals.

Math 124 a function and its derivative	Math 125 a function and its antiderivative
$\frac{d}{dx}\left(x^{a+1}\right) = (a+1)\,x^a$	$\int x^a\ dx = \frac{1}{a+1}\ x^{a+1} + C \quad (a \neq -1)$
$\frac{d}{dx}\left(b^x\right) = (\ln b)\,b^x \quad (b>0)$	$\int b^x\ dx = \frac{1}{\ln b}\ b^x + C \quad (b>0)$
$\frac{d}{dx}\left(\ln\lvert x\rvert\right) = \frac{1}{x}$	$\int \frac{1}{x}\ dx = \ln\lvert x\rvert + C$
$\frac{d}{dx}\left(\cos x\right) = -\sin x$	$\int \sin x\, dx = -\cos x + C$
$\frac{d}{dx}\left(\sin x\right) = \cos x$	$\int \cos x\, dx = \sin x + C$
$\frac{d}{dx}\left(\tan x\right) = \frac{1}{(\cos x)^2}$	$\int \frac{1}{(\cos x)^2}\, dx = \tan x + C$
$\frac{d}{dx}\left(\arctan x\right) = \frac{1}{1+x^2}$	$\int \frac{1}{1+x^2}\, dx = \arctan x + C$
$\frac{d}{dx}\left(\arcsin x\right) = \frac{1}{\sqrt{1-x^2}}$	$\int \frac{1}{\sqrt{1-x^2}}\, dx = \arcsin x + C$