Math 1496 Calc 1 - Homework #1

Pg. 17, #43, 45, 47
Pg. 27-28, #11, 12, 19, 21, 23, 64, 65,
Pg. 38-39, #17, 19, 31, 33, 35,
Pg. 48 # 9, 31, 34
Pg. 51# 123
Pg. 57 #11, 15, 19, 21
Pg. 59 #107, 115, 117

Pg. 17
Find the equation of the line through the following points.
#43 $(4,3),(0,-5)$ #45 $(2,8),(5,0)$ #47 $(6,3),(6,8)$

Pg. 27
Evaluate the function at the given value and simplify your result.
#11 $f(x)=x^3,\ \dfrac{f(x+\Delta x)-f(x)}{\Delta x}$ #12 $f(x)=3x-1,\ \dfrac{f(x)-f(1)}{x-1}$

Pg. 27
Find the domain and range of the following.
#19 $f(x)=\sqrt{16-x^2}$ #21 $f(x)=\dfrac{3}{x}$ #23 $f(x)=\sqrt{x}+\sqrt{1-x}$

pg. 28
Find the composition $f\circ g$ and $g\circ f$ for the following
#64 $f(x)=x^2-1\quad g(x)=-x$ #65 $f(x)=\dfrac{3}{x}\quad g(x)=x^2-1$

Pg. 38
Sketch a right angle triangle corresponding to the trig function given and then evaluate the other 5 trig functions
#17 $\sin\theta=\dfrac{1}{2}$ #19 $\cos\theta=\dfrac{4}{5}$

Pg. 39
Find two solutions of each equation (the answer in radians $0\le\theta\le 2\pi$)
#31 $\cos\theta=\dfrac{\sqrt{2}}{2}\quad \cos\theta=-\dfrac{\sqrt{2}}{2}$
#33 $\tan\theta=1\quad \cot\theta=-\sqrt{3}$

Pg. 35
Solve the following for $\theta, 0\le\theta\le 2\pi$
#35 $2\sin^2\theta=1$

Pg. 48

For the following verify that f and g are inverses (#9) and find the inverse (#31 and 34)

#9 $f(x) = 5x + 1, \quad g(x) = \dfrac{x-1}{5}$

#31 $f(x) = 2x - 3$

#34 $f(x) = x^3 - 1$

Pg. 51

Evaluate the following without using a calculator.

#123 (a) $\sin\left(\arctan\dfrac{3}{4}\right)$ $\quad (b)$ $\sec\left(\arcsin\dfrac{4}{5}\right)$

Pg. 57

Solve the following for x.

#11 $3^x = 81$

#15 $\left(\dfrac{1}{2}\right)^x = 32$

#19 $4^3 = (x+2)^3$

#21 $x^{3/4} = 8$

Pg. 59

Solve the following for x.

#107 $e^x = 12$

#115 $\ln(x-3) = 2$

#117 $\ln\sqrt{x+2} = 1$