

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 $f(x) = x^3$, $\frac{f(x + \Delta x) - f(x)}{\Delta x}$ #12 $f(x) = 3x - 1$, $\frac{f(x) - f(1)}{x - 1}$

Pg. 27

Find the domain and range of the following.

#19 $f(x) = \sqrt{9 - x^2}$ #21 $f(x) = \frac{3}{x}$ #23 $f(x) = \sqrt{x} + \sqrt{1 - x}$

pg. 28

Find the composition $f \circ g$ and $g \circ f$ for the following

#64 $f(x) = x^2 - 1$ $g(x) = -x$ #65 $f(x) = \frac{3}{x}$ $g(x) = x^2 - 1$

Pg. 38

Sketch a right angle triangle corresponding to the trig function given and then evaluate the other 5 trig functions

#17 $\sin \theta = \frac{1}{2}$ #19 $\cos \theta = \frac{4}{5}$

Pg. 39

Find two solutions of each equation (the answer in radians $0 \leq \theta \leq 2\pi$)

#31 $\cos \theta = \frac{\sqrt{2}}{2}$ $\cos \theta = -\frac{\sqrt{2}}{2}$

#33 $\tan \theta = 1$ $\tan \theta = -\sqrt{3}$

Pg. 48

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

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

#31 $f(x) = 2x - 3$ #34 $f(x) = x^3 - 1$

Pg. 51

Evaluate the following without using a calculator.

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

Pg. 57

Solve the following for x .

$$\#11 \ 3^x = 81 \quad \#15 \ \left(\frac{1}{2}\right)^x = 32 \quad \#19 \ 4^3 = (x+2)^3 \quad \#21 \ x^{3/4} = 8$$

Pg. 59

Solve the following for x .

$$\#107 \ e^x = 12 \quad \#115 \ \ln(x-3) = 2 \quad \#117 \ \ln\sqrt{x+2} = 1$$