Turn-in Homework Format

1. Write the page number from the book and the problem number in the book. Draw a box around it.

2. Write the problem out completely.

3. Do your work beneath where you wrote the problem.

4. At the end of your work, underline your answer 3 times and draw an arrow from the right hand side of your paper over to your answer.

5. You may write on the front and the back of a page but **do not** make columns down the page.

example:

Name
Course

p. 72, # 64

$7 + (12 - 9)^2 \times 2 + 3$
$7 + (3)^2 \times 2 + 3$
$7 + 9 \times 2 + 3$
28 ←

A good study habit to develop is to write notes to yourself on what your thought process was on the problem (especially if it is long or involved one) in this space over to the right of your work. Since you underline your answer and draw an arrow to it, any notes won't interfere with me following your work and finding your answer.

p. 77, #37

$5 + |x| < 2$
$-5 \quad -5$
$|x| < -3$
no solution ←

p. 77, #43

$|x + 5| + 2 > 8$
$-2 \quad -2$
$|x + 5| > 6$
$x + 5 < -6$ or $x + 5 > 6$
$-5 \quad -5 \qquad -5 \quad -5$
$x < -11$ or $x > 1$ ←

Turn the page over and work on the back now, do not go to the top and carry a column down the right hand side of the page.

NAME
MAC1140
Precal Homework

pg. 903 #12

$\lim_{x \to 6} (-5) = -5$ ← constant rule $\lim_{x \to a} k = k$

pg. 903 #14

$\lim_{x \to -\sqrt{2}} x = -\sqrt{2}$ ← limit of x rule $\lim_{x \to a} x = a$

pg 903 #18

$\lim_{x \to -1} \frac{2x+3}{3x+4} = 1$ ← substitute $x \to 1$ into equations (#8)

pg. 903 #20

$\lim_{x \to 3} \frac{x^2-9}{x-3}$

$\lim_{x \to 3} \frac{(x-3)(x+3)}{(x-3)}$

$\lim_{x \to 3} x+3 = 6$ ←

if x cannot be substituted, factor out num./denom., then subst. into what's left

pg. 903 #22

$\lim_{x \to -2} \frac{x^2-x-6}{x+2}$

$\lim_{x \to -2} \frac{(x-3)(x+2)}{(x+2)}$

$\lim_{x \to -2} x-3 = -5$

pg. 903 #26

$\lim_{x \to 3} \sqrt{6x-2}$

$\lim_{x \to 3} (6x-2)^{1/2}$

$\left[\lim_{x \to 3} (6x-2)\right]^{1/2}$

change $\sqrt{}$ to power of $1/2$ then sub $x \to \#$ into equation the $1/2$ power the result

$= 16^{1/2}$

$= 4$

$\lim_{x \to 3} \sqrt{6x-2} = 4$

pg. 903 #33

$\lim_{x \to 0} [2^{3x} - \ln(x+1)]$

$\ln \left[\lim_{x \to 0} 2^{3x}(x+1)\right]$

$\ln 1(1)$

$\lim_{x \to 0} [2^{3x} - \ln(x+1)] = +\infty$

pg. 903 #34

$\lim_{x \to 3} \frac{\sqrt{x+1}}{\log_2(5x+1)}$

bring log to front, enclose all in brackets, then sub x into all x's, then bring log to product of x's, the change of base to solve.

$\log_2 \left[\lim_{x \to 3} \frac{\sqrt{x+1}}{(5x+1)}\right]$

$\log_2 \left[\lim_{x \to 3} \frac{4}{16}\right]$

$\log_2 \left[\lim_{x \to 3} \frac{1}{4}\right] = \log_2 1/4 = \frac{\log 1/4}{\log 2} = \frac{-.60206}{.30103} = -2$

pg. 904 #35

$$\lim_{x \to 0} \frac{\sin x - 3x}{x}$$

$$\lim_{x \to 0} \frac{\sin x}{x} - \frac{3x}{x}$$

$$\lim_{x \to 0} \frac{\sin x}{x} = 1 - 3 = -2$$

pg. 904 #39

$$\lim_{x \to 0} \frac{\cos x - 1}{3x}$$

$$\lim_{x \to 0} \frac{\cos x - 1}{x} \cdot \frac{1}{3}$$

$$\lim_{x \to 0} \frac{\cos x - 1}{x} = 0 \cdot \frac{1}{3} = 0 \text{ does not exist}$$