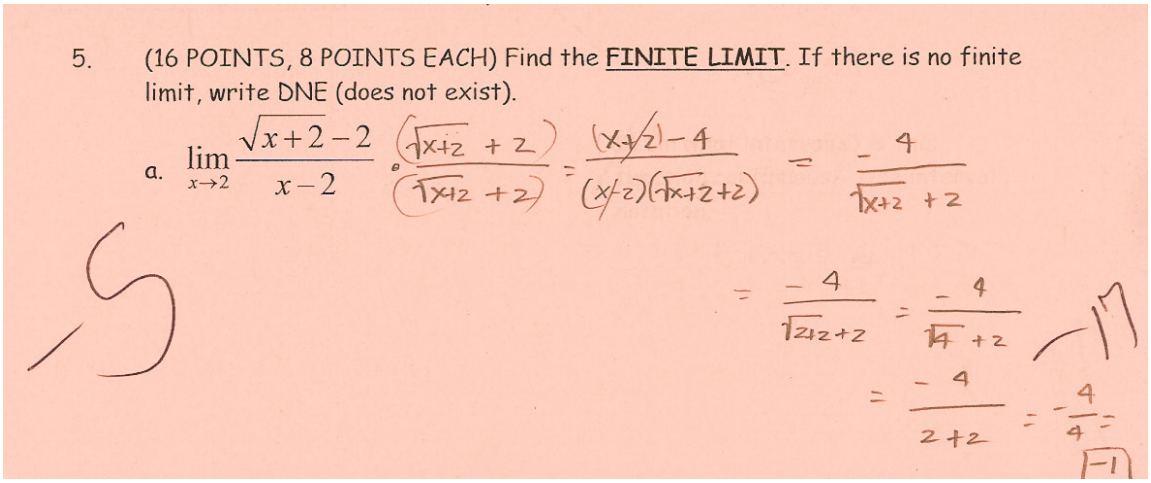
GUIDELINES FOR RE-WORKING EXAMS

For each problem missed on your exam, complete the following steps:

a) Thoroughly analyze, in words, why you missed the problem.
b) Re-work the problem correctly. Have your answer checked by a classmate, a tutor, or your instructor.

Example:



5. (16 POINTS, 8 POINTS EACH) Find the **FINITE LIMIT**. If there is no finite limit, write DNE (does not exist).

a. $\lim_{x\to 2}\dfrac{\sqrt{x+2}-2}{x-2}$

$\dfrac{(\sqrt{x+2}+2)}{(\sqrt{x+2}+2)} = \dfrac{(x+2)-4}{(x-2)(\sqrt{x+2}+2)} = \dfrac{-4}{\sqrt{x+2}+2}$

$= \dfrac{-4}{\sqrt{2+2}+2} = \dfrac{-4}{\sqrt{4}+2}$

$= \dfrac{-4}{2+2} = -\dfrac{4}{4} =$

-1

a) I missed this problem because I crossed out the (x + 2) in the numerator and the (x – 2) in the denominator. This was wrong for a couple of reasons. First of all, (x + 2) and (x - 2) are not common factors. Secondly, (x + 2) – 4 needs to be simplified to x – 2 before I can divide anything out of the numerator.

b)

$$\lim_{x\to 2}\frac{\sqrt{x+2}-2}{x-2} = \lim_{x\to 2}\frac{\sqrt{x+2}-2}{x-2}\cdot\frac{\sqrt{x+2}+2}{\sqrt{x+2}+2}$$

$$= \lim_{x\to 2}\frac{(x+2)-4}{(x-2)\left(\sqrt{x+2}+2\right)}$$

$$= \lim_{x\to 2}\frac{\cancel{(x-2)}}{\cancel{(x-2)}\left(\sqrt{x+2}+2\right)}$$

$$= \frac{1}{\left(\sqrt{2+2}+2\right)}$$

$$= \frac{1}{4}$$