Math 200 - Quiz 1

January 18, 2012

Name _key_

Score _____

Show all work to receive full credit. Supply explanations when necessary.

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1. (5 points) Consider the following problem.

   A rectangle is 7 in longer than it is wide. Find the area of the rectangle if its perimeter is 38 in.

   (a) Describe any two specific, significant things that you would do to understand this problem.

   ① RECALL (OR LOOK UP) WHAT IT MEANS TO BE A RECTANGLE

   ② RECALL (OR LOOK UP) HOW TO FIND THE AREA OF A RECTANGLE

   ③ RECALL (OR LOOK UP) HOW TO FIND THE PERIMETER OF A RECTANGLE

   (b) Suppose Julia's approach to solving the problem involved first finding the width of the rectangle. Which strategy is she using?

   IN DEVISING A PLAN, JULIA IS IDENTIFYING

   AND WORKING TOWARD A SUBGOAL.

   (c) In addition to the strategy that Julia used, which additional strategy would you probably use to solve this problem?

   I WOULD DRAW A PICTURE

   LIKE THAT ———▶

   $\ell = \omega + 7$

   ω |_____| ω

   $\ell = \omega + 7$
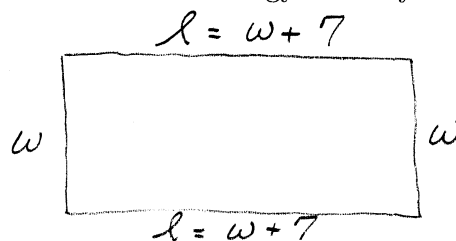
   (d) When Julia finished solving the problem, she stated her solution as follows: _The length of the rectangle is 13 in, and the width is 6 in._ What would you say about Julia's solution?

   JULIA HAS NOT COMPLETELY SOLVED THE PROBLEM.

   SHE IS TO FIND THE AREA OF THE RECTANGLE.

   (e) In what sense is Julia's solution correct? What is the correct solution of the problem?

   THE LENGTH AND WIDTH OF THE CORRECT RECTANGLE

   ARE 13 in AND 6 in, AS SHE STATED, BUT SHE

   DID NOT COMPUTE THE AREA.

   AREA = 13 in × 6 in = 78 in^2