

Math 200 - Quiz 1

September 1, 2010

Name key

Score _____

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

1. (1 point) Clearly state, in order, the steps of Polya's problem-solving process.

① UNDERSTAND THE PROBLEM

③ CARRY OUT THE PLAN

② DEVISE A PLAN

④ LOOK BACK

2. (1 point) When using the problem-solving process, which one of these strategies would NOT be considered part of carrying out the plan?

(a) Implement the plan you decided upon.

(b) Keep accurate notes of your work.

③ (c) Sketch a picture. ← PART OF DEVISE A PLAN

(d) Check your work at each step.

3. (1 point) State two different strategies for looking back.

① CHECK YOUR SOLUTION IN THE ORIGINAL WORDING OF THE PROBLEM.

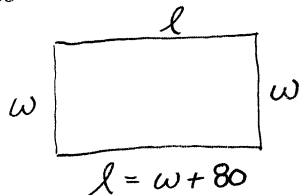
② GENERALIZE

4. (2 points) A farmer needs to fence a rectangular field. The length of the field is 80 ft longer than the width. If the farmer has 1080 ft of fencing material, what should the length and width of the field be? In conjunction with your approach to solving this problem, clearly explain how you used any one step of the problem-solving process.

UNDERSTAND

l = LENGTH OF FIELD

w = WIDTH OF FIELD



AMOUNT OF FENCING

$$1080 = 2l + 2w = 2(w + 80) + 2w$$

DEVISE A PLAN

AT THIS POINT, THE TWO SIMPLEST STRATEGIES WOULD BE GUESS & CHECK OR ALGEBRAICALLY SOLVE THE EQUATION

$$1080 = 2(w + 80) + 2w$$

CARRY OUT

ALGEBRA:

$$1080 = 2w + 160 + 2w$$

$$920 = 4w$$

$$230 = w$$

$$w = 230 \text{ FT}, l = 310 \text{ FT}$$

LOOK BACK

l IS 80 FT MORE THAN w ✓
 $230 + 310 + 230 + 310 = 1080$ ✓