Algorithm Analysis and Design

Quiz 1

1. For an algorithm of computing the sum of n numbers, n is the natural size metric for its inputs.
   a. (*) true b. false
2. For the function $\sqrt{n}$, how much the function's value will change if its argument is increased fourfold.
   a. (*) 2 b. 4 c. 8
3. $n(n + 1)/2 \in O(n^2)$
   a. (*) true b. false
4. $n(n + 1)/2 \in \Theta(n^3)$
   a. true b. (*) false
5. Can the following formula be considered an algorithm for computing the area of a triangle whose side lengths are given positive numbers a, b, and c?
   $\boldsymbol{S = \frac{1}{2} bc \sin A}$, where A is the angle between sides b and c
   a. yes b. (*) no
   if no, justify your answer (it is ambiguous: how to compute sin A)