1. A company has determined the demand curve for their product is $q = \sqrt{5000 - p^2}$, in millions of items, where p is the price in dollars at time t, in weeks. If weather conditions are driving the price up \$2 a week, what is happening to the demand rate when the price is \$40?

   (a) demand is falling by approximately 466.5 million items per week

   (b) demand is increasing by approximately 466.5 million items per week.

   (c) demand is falling by approximately 1.37 million items per week

   (d) demand is increasing by approximately 1.37 million items per week