Math 1314 − College Algebra ***Homework Sec.* 1.5**

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1. The length and width of a rectangle have a sum of 88. What dimensions give the maximum area?
2. The number of mosquitoes , in millions, in a certain area depends on the June rainfall *x*, in inches, according to the function . What rainfall produces the maximum number of mosquitoes?
3. The function  represents the yearly income (or loss) from a real estate investment, where *t* is time in years. After what year does income begin to decline?
4. John owns a hotdog stand. His profit is represented by , with  being profit and *x* the number of hotdogs sold. What is the most he can earn?
5. A projectile is thrown upward so that its distance above the ground after *t* seconds is . After how many seconds does it reach its maximum height?

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