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| Lesson 1.11 | Quadratic Systems of Equations Homework |

**Solve the following systems algebraically. Verify your answers graphically.**

1.  2.  3. 

4.  5.  6. 

7.  8. Graphically: 

**Use the given information to write a system of equations, and solve the system algebraically to answer the question.**

1. A soccer ball is kicked so that its height in feet t seconds after it is kicked can be modeled by the function h(t) = –16t2 + 45t + 1. A hawk flies from its nest 45 feet above the ground at the same time that the player kicks the ball. The hawk’s flight can be modeled by the function h2(t) = 45 – 12t. After how many seconds will the hawk and ball first reach the same height above the ground?
2. Janetta is a hairstylist who accepts tips. Her profit *P* each week can be modeled by the function *P*(*c*) = –200*c2*+ 2400*c* – 4700, where *c* is the charge per customer. Bertram is the manager at the salon. He is paid a flat rate and cannot accept tips. His profit each week can be modeled by the function *P*(*c*) = 500. What must Janetta charge in order for her profit to match Bertram’s profit? Explain.