

**Worksheet 3.3: Applications of
Linear Equations**

1. A school is putting on a production of *Chicago*. There were 186 tickets sold for a particular night, some for \$16 (nonstudent price) and others for \$12 (student price). If the receipts totaled \$2640, how many of each type of ticket were sold?

2. John and Ariana bought school supplies. John spent \$10.65 on 4 notebooks and 5 pens. Ariana spent \$7.50 on 3 notebooks and 3 pens. What is the cost of 1 notebook and what is the cost of 1 pen?

3. How much fertilizer containing 8% nitrogen should be mixed with a fertilizer containing 12% nitrogen to get 8 L of a fertilizer containing 11% nitrogen?

4. How much 30% acid solution should be added to a 10% acid solution to make 100 mL of a 12% acid solution?

5. It takes a motor boat 2 hr to travel 16 mi downstream with the current and 4 hr to return against the current. Find the speed of the boat in still water and the speed of the current.

6. A plane flies from Atlanta to Los Angeles against the wind in 5 hr. The return trip back to Atlanta with the wind takes only 4 hr. If the distance between Atlanta and Los Angeles is 3200 km, find the speed of the plane in still air and the speed of the wind.