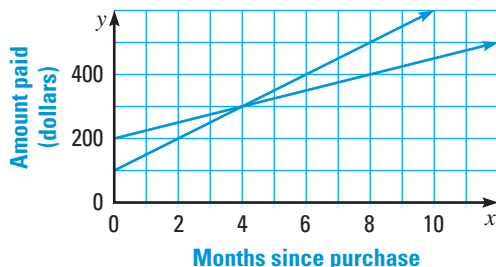


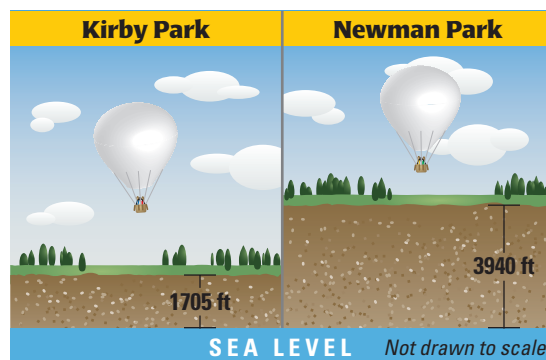
- MULTI-STEP PROBLEM** Flying into the wind, a helicopter takes 15 minutes to travel 15 kilometers. The return flight takes 12 minutes. The wind speed remains constant during the trip.
 - Find the helicopter's average speed (in kilometers per hour) for each leg of the trip.
 - Write a system of linear equations that represents the situation.
 - What is the helicopter's average speed in still air? What is the speed of the wind?



- SHORT RESPONSE** At a grocery store, a customer pays a total of \$9.70 for 1.8 pounds of potato salad and 1.4 pounds of coleslaw. Another customer pays a total of \$6.55 for 1 pound of potato salad and 1.2 pounds of coleslaw. How much do 2 pounds of potato salad and 2 pounds of coleslaw cost? *Explain.*
- GRIDDED ANSWER** During one day, two computers are sold at a computer store. The two customers each arrange payment plans with the salesperson. The graph shows the amount y of money (in dollars) paid for the computers after x months. After how many months will each customer have paid the same amount?



- OPEN-ENDED** Describe a real-world problem that can be modeled by a linear system. Then solve the system and interpret the solution in the context of the problem.
- SHORT RESPONSE** A hot air balloon is launched at Kirby Park, and it ascends at a rate of 7200 feet per hour. At the same time, a second hot air balloon is launched at Newman Park, and it ascends at a rate of 4000 feet per hour. Both of the balloons stop ascending after 30 minutes. The diagram shows the altitude of each park. Are the hot air balloons ever at the same height at the same time? *Explain.*



- EXTENDED RESPONSE** A chemist needs 500 milliliters of a 20% acid and 80% water mix for a chemistry experiment. The chemist combines x milliliters of a 10% acid and 90% water mix and y milliliters of a 30% acid and 70% water mix to make the 20% acid and 80% water mix.
 - Write a linear system that represents the situation.
 - How many milliliters of the 10% acid and 90% water mix and the 30% acid and 70% water mix are combined to make the 20% acid and 80% water mix?
 - The chemist also needs 500 milliliters of a 15% acid and 85% water mix. Does the chemist need more of the 10% acid and 90% water mix than the 30% acid and 70% water mix to make this new mix? *Explain.*