Exercises - Problem Solving Using Linear Models

1

At the beginning of a trip, the tank of Chloe's car was filled with 12 gallons of gas. When she travels constantly on the highway 60 miles per hour, the car consumes 1 gallon of gas per 35 miles. If she traveled 5 hours and 15 minutes on the highway with a constant speed of 60 miles per hour, how many gallons of gas are left in the tank?

A) 3

B) 4

C) 5

D) 6

2

A rock climber is climbing up a 450 feet high cliff. By 9:30 AM. the climber reached 90 feet up the cliff and by 11:00 AM he has reached 210 feet up the cliff. If he climbs with a constant speed, by what time will he reach the top of the cliff?

A) 1:45 PM

B) 2:00 PM

C) 2:15 PM

D) 2:30 PM

3

In 2005 a house was purchased for $280,000 and in 2013 it was sold at $334,000. Assuming that the value of the house increased at a constant annual rate what will be the price of the house in the year 2018?

A) $354,250

B) $361,000

C) $367,750

D) $374,500

4

To join Eastlake Country Club one must pay d dollars for a one time membership fee and pay w dollars for a monthly fee. If the first month is free for the club, what is the total amount, y, x months after a person joined the club, in terms of d, w, and x?

A) $y = wx - 1 + d$

B) $y = w(x-1) + d$

C) $y = d(x-1) + w$

D) $y = dx - 1 + w$

5

From 1990 to 2000 The population of city A rose from 12,000 to 28,000 and the population of city B rose from 18,000 to 24,000. If the population of the two cities increased at a constant rate, in what year was the population of both cities the same?

6

An empty 1,200 gallon tank is filled with water at a rate of 6 gallons of water per minute. At the same time, another 1,200 gallon tank full of water is being drained at a rate of 9 gallons per minute. How many minutes will it take for the amount of water in both tanks to become the same?