**Linear Depreciation**

1. Delia purchased a new car for $25,350. This make and model straight line depreciates to zero after 13 years.
   1. Identify the coordinates of the x-and y intercepts for the depreciation equation.
   2. Determine the slope of the depreciation equation.
   3. Write the straight line depreciation equation the models this situation.
2. Vince purchased a used car for $11,200. This make and model used car straight line depreciates to zero after 7 years.
   1. Identify the coordinates of the x and y intercepts for the depreciation equation.
   2. Determine the slope of the depreciation equation.
   3. Write the straight line depreciation equation that models this situation.
3. The straight line depreciation equation for a motorcycle is y = – 2,150x + 17,200.
   1. What is the original price for the motorcycle?
   2. How much value does the motorcycle lose per year?
   3. How many years will it take for the motorcycle to totally depreciate?
4. The straight line depreciation equation for a car is y = – 2,750x + 22,000.
   1. What is the car worth after 5 years?
   2. What is the car worth after 8 years?
5. A car is originally worth $34,450. It takes 13 years for this car to totally depreciate.
   1. Write the straight line depreciation equation for this situation.
   2. How long will it take for the car to be worth half of its value?
   3. How long will it take for the car to be worth $10,000? Round your answer to the nearest tenth of a year.

**Exponential Depreciation**

1. Seth bought a car that originally sold for $40,000. It exponentially depreciates at a rate of 7.75% per year. Write the exponential depreciation equation for this car.

1. Shannon’s new car sold for $28,000. Her online research indicates that the car will depreciate exponentially at a rate of 5 ¼% per cent. Write the exponential depreciation formula for Shannon’s car.

1. Chris purchased a used car for $19,700. The car depreciates exponential by 10% per year. How much will the car be worth after 6 years? Round your answer to the nearest penny.

1. The car that Diana bought is 8 years old. She paid $6,700. This model depreciates exponentially at a rate of 14.15% per year. What was the original price of the car when it was new?

1. A new car sells for $27,300. It exponentially depreciates at a rate of 6.1% to $22,100. How long did it take the car to depreciate to this amount? Round your answer to the nearest tenth of a year.

1. Amber bought a used car valued at $6,000. When the car was new, it was sold for $28,000. If the car depreciates exponentially at a rate of 9% per year, approximately how old is the car?

1. Laura’s new car cost her $21,000. She was told that this make and model depreciates exponentially at a rate of 8 ¾ % per year. How much will her car be worth after 8 ½ years?