

Math 3 Advanced

Determine the math model (equation) for the contextual problem, then solve the problem.

1. A radioactive element has a decay rate of 15% every hour. How much (in percentage) is left in 12 hours?
2. A radioactive element has a decay rate of 8% every 15 minutes. How much (in percentage) is left in 24 hours?
3. A radioactive element has a decay rate of 30% every 4 days. How much (in percentage) is left in 4 weeks?
4. A radioactive element has a decay rate of 5% every 20 minutes. How much (in percentage) is left in 18 hours?
5. A drug has a half-life in the human body of 30 minutes. How much (in percentage) of the drug will be remaining in the body in 24 hours?
6. A drug has a half-life in the human body of 3 days. How much (in percentage) of the drug will be remaining in the body in 30 days?
7. A drug has a half-life in the human body of 1 week. How much (in percentage) of the drug will be remaining in the body in 8 weeks?
8. A drug has a half-life in the human body of 2 hours. How much (in percentage) of the drug will be remaining in the body in 72 hours?
9. A new car cost \$24,000. If it depreciates 12% every year, what will it be worth in 12 years?
10. A new car cost \$40,000. If it depreciates 14% every year, what will it be worth in 10 years?