MIXED REVIEW FOR TEKS

TAKS PRACTICE
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Lessons 8.4–8.6

MULTIPLE CHOICE

1. **EARTH** The radius of Earth is about 6370 kilometers. The surface area S of a sphere with radius r is given by $S = 4\pi r^2$. If you assume that Earth is a perfect sphere, which of the following is the surface area of Earth? *TEKS A.11.A*

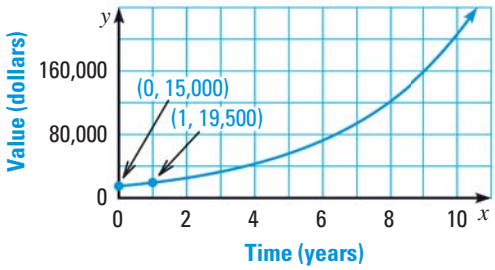
   (A) 5.10×10^4 km^2

   (B) 5.10×10^5 km^2

   (C) 5.10×10^6 km^2

   (D) 5.10×10^8 km^2

2. **BUSINESS** The graph of the exponential growth function shows the value of a business over time.



   Which of the following equations models the value v (in dollars) of the business over time t (in years)? *TEKS A.11.C*

   (F) $v = 15{,}000(1.30)^t$

   (G) $v = 15{,}000(0.70)^t$

   (H) $v = 15{,}000(0.50)^t$

   (J) $v = 15{,}000(0.30)^t$

3. **CHEMISTRY** Avogadro's number is a number chemists use to describe quantities of atoms. Avogadro's number is defined as the number of atoms in exactly 12 grams of carbon, or 6.022×10^{23}. Divide 12 grams by Avogadro's number to find the mass (in grams) of a single carbon atom. *TEKS A.11.A*

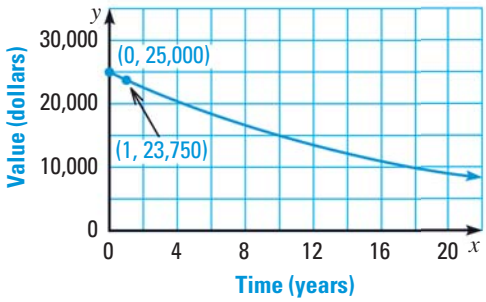
   (A) 1.993×10^{-24}

   (B) 5.018×10^{-24}

   (C) 1.993×10^{-23}

   (D) 5.018×10^{-22}

4. **TRUCK** The exponential decay graph shows the value of a truck over time.



   How is the value changing? *TEKS A.11.C*

   (F) Decreasing by 5% each year

   (G) Decreasing by $1250 each year

   (H) Decreasing by 95% each year

   (J) Decreasing by $2250 each year

5. **SAVINGS** An employee earns $35,000 one year. She deposits 10% of the money into a savings account that earns 4% annual interest compounded yearly. After 2 years, how much more money does she have than if she had not put her money into the account? *TEKS A.11.C*

   (A) $280 (B) $285.60

   (C) $3780 (D) $3785.60

6. **MEDICINE** The half-life of a medication is the time it takes for the medication to reduce to half of its original amount in a patient's bloodstream. A certain antibiotic has a half-life of about 8 hours. A patient is administered 500 milligrams of the antibiotic. How much of the dose will be in the patient's bloodstream after 24 hours? *TEKS A.11.A*

   (F) 0 mg (G) 62.5 mg

   (H) 75 mg (J) 125 mg

GRIDDED ANSWER

7. **LAPTOP** A new laptop costs $2000. The value of the laptop decreases over time. A model for the value v (in dollars) of the laptop after t years is given by $v = 2000(0.90)^t$. What is the decay rate (as an annual percent in decimal form) of the value of the laptop? *TEKS A.11.C*