Lessons 9.1–9.4

MULTIPLE CHOICE

1. **DOGS** A dog leaps from the ground into the air with an initial vertical velocity of 12 feet per second. After how many seconds does the dog land on the ground. *TEKS A.4.A*

   (A) 0.75 sec   (B) 1.3 sec

   (C) 3 sec   (D) 4 sec

2. **SNOW SPORTS** During the period 1992–2000, the number C (in millions) of people participating in cross-country skiing and the number S (in millions) of people participating in snowboarding can be modeled by

   $$C = 0.067t^3 - 0.107t^2 + 0.27t + 3.5$$

   $$S = 0.416t + 1.24$$

   where t is the number of years since 1992. Which equation models the total number T (in millions) of people participating in cross-country skiing and snowboarding as a function of the number of years since 1992? *TEKS A.4.A*

   (F) $T = 0.067t^3 - 0.107t^2 + 0.686t + 4.74$

   (G) $T = 0.067t^3 - 0.523t^2 + 0.27t + 4.74$

   (H) $T = 0.483t^3 - 1.331t^2 + 0.27t + 3.5$

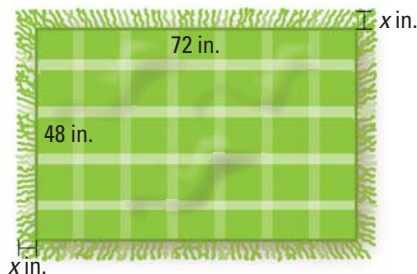   (J) $T = 0.483t^3 + 1.133t^2 + 0.27t + 3.5$

3. **HORSES** A horse with pinto coloring has white fur with patches of color. The gene P is for pinto coloring, and the gene s is for solid coloring. Any gene combination with a P results in pinto coloring.

   Suppose a male horse has the gene combination Ps and a female horse has the gene combination ss. What percent of the possible gene combinations of their offspring result in pinto coloring? *TEKS A.1.C*

   (A) 25%

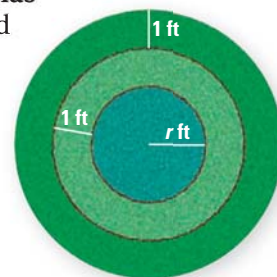   (B) 50%

   (C) 75%

   (D) 100%

4. **BLANKET** You are making a blanket with a fringe border of equal width on each edge, as shown. Which polynomial represents the total area (in square inches) of the blanket with the fringe? *TEKS A.4.B*

   (F) $3456x^2$ (G) $3456 + 120x + x^2$

   (H) $120x^2$ (J) $3456 + 240x + 4x^2$

5. **RUG** A circular rug has an interior circle and two rings around the circle, as shown. Which polynomial represents the total area of the rug? *TEKS A.4.B*

   (A) $\pi r^2 + 2\pi$

   (B) $\pi r^2 + 2\pi + \pi r$

   (C) $\pi r^2 + 4\pi + 2r\pi$

   (D) $\pi r^2 + 4\pi + 4\pi r$

GRIDDED ANSWER ⓪①●③④⑤⑥⑦⑧⑨

6. **FOOTBALL** A football is kicked from the ground into the air with an initial vertical velocity of 44 feet per second. How many seconds is the football in the air? *TEKS A.4.A*

7. **TOYS** During the period 1996–2000, the total value T (in millions of dollars) of toys imported to the United States can be modeled by

   $$T = 82.9t^3 - 848t^2 + 3030t + 9610$$

   where t is the number of years since 1996. What is the degree of the polynomial? *TEKS a.3*