MIXED REVIEW FOR TEKS

TAKS PRACTICE
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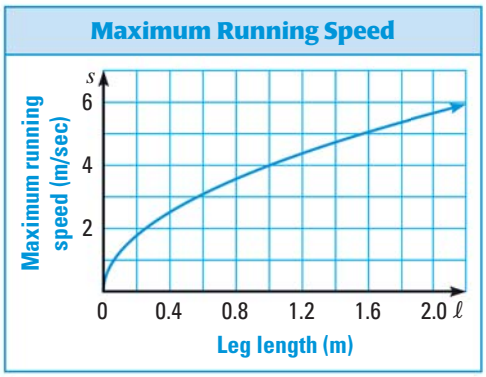
Lessons 11.1–11.3

MULTIPLE CHOICE

1. **STOCKS** The number y of companies listed on the New York Stock Exchange for the period 1999–2002 can be modeled by the function $y = 3018 - 146\sqrt{x}$ where x is the number of years since 1999. About how many more companies were listed on the New York Stock Exchange in 1999 than in 2001? *TEKS 2A.9.D*

   (A) 73 (B) 146
   (C) 206 (D) 292

2. **RUNNING SPEED** A person's maximum running speed s (in meters per second) as a function of the person's leg length ℓ (in meters) is graphed below. To the nearest tenth of a meter, what is the leg length of a person whose maximum running speed is about 3.6 meters per second? *TEKS 2A.9.D*



   (F) 0.6 (G) 0.8
   (H) 6.6 (J) 7.4

3. **AMPLIFIER** The voltage V (in amperes) of an amplifier is given by the function $V = \sqrt{PR}$ where P is the power (in watts) and R is the resistance (in ohms). A particular amplifier uses 10 amperes and has a resistance of 4 ohms. How many watts are produced by the amplifier? *TEKS 2A.9.D*

   (A) 2.5 (B) 5
   (C) 25 (D) 40

4. **CORN** For the period 1994–2001, the annual consumption (in pounds per person) of corn products y in the United States can be modeled by the function $y = 6.1\sqrt{x + 15.8}$ where x is the number of years since 1994. In what year were about 25 pounds of corn products consumed per person? *TEKS 2A.9.D*

   (F) 1995 (G) 1996
   (H) 1997 (J) 1998

5. **CARS** The velocity v (in meters per second) of a car moving in a circular path that has a radius r (in meters) is given by $v = \sqrt{\frac{Fr}{m}}$ where F is the force (in newtons) pulling the car toward the center of the circle and m is the mass of the car (in kilograms). A 1600 kilogram car is traveling in a circular path with a radius of 175 meters. The force is 200 newtons. What is the velocity (in meters per second) of the car? *TEKS 2A.9.D*

   (A) $\frac{1}{4}\sqrt{7}$ (B) $\frac{5}{8}\sqrt{7}$
   (C) $\frac{5}{4}\sqrt{14}$ (D) $2000\sqrt{14}$

GRIDDED ANSWER

6. **SOUND** Near Earth's surface, the speed s (in meters per second) of sound through air is given by $s = 20\sqrt{T + 273}$ where T is the air temperature (in degrees Celsius). Suppose that a ship is 1000 meters from a loud foghorn and that the air temperature is 16°C. About how many seconds will it take for the sound to travel to the ship? Round your answer to the nearest tenth of a second. *TEKS 2A.9.D*