MIXED TAKS PRACTICE

6. Consider a right circular cone with radius r, height h, and slant height ℓ. Which equation represents the ratio of the cone's volume V to its total surface area S? *TAKS Obj. 10*

F $\dfrac{V}{S} = \dfrac{h}{\ell}$

G $\dfrac{V}{S} = \dfrac{\ell}{h}$

H $\dfrac{V}{S} = \dfrac{3rh}{r + \ell}$

J $\dfrac{V}{S} = \dfrac{rh}{3(r + \ell)}$

7. Which statement best describes the relationship between the graphs of the linear equations? *TAKS Obj. 7*

$$y = 12 - 4x$$
$$24x + y = 12$$

A The lines are parallel to each other.

B The lines are perpendicular to each other.

C The lines have the same x-intercept.

D The lines have the same y-intercept.

8. The diagram shows two different hiking paths from a ranger station to a fire tower. A hiker decides to hike the Ridge Trail and Mountain Top Trail instead of the Scenic Trail. How much farther does the hiker travel? *TAKS Obj. 8*
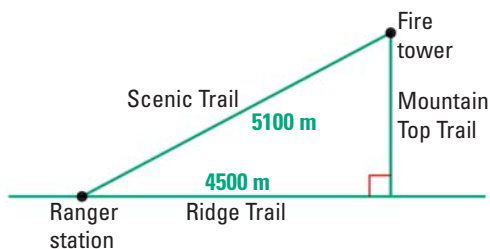
F 1800 m

G 2200 m

H 2400 m

J 3200 m

9. Which linear equation has a graph that passes through $(-3, 2)$ and is perpendicular to the line $-2x + 4y = 9$? *TAKS Obj. 3*
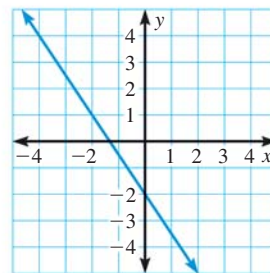
A $y = -2x - 4$

B $y = 2x + 8$

C $y = \dfrac{1}{2}x + \dfrac{7}{2}$

D $y = -\dfrac{1}{2}x + \dfrac{1}{2}$

10. Based on the graph, what is the value of x when $y = 4$? *TAKS Obj. 4*

F $x = -8$

G $x = -4$

H $x = -2$

J $x = 4$

11. The midpoint of $\overline{ST}$ is $M(5, 12)$. The coordinates of S are $(15, -6)$. What are the coordinates of T? *TAKS Obj. 7*

A $(-5, 30)$

B $(5, -30)$

C $(10, 3)$

D $(25, -24)$

12. **GRIDDED ANSWER** The height of a ball dropped from a 36-foot-high roof is modeled by the equation $h = -16t^2 + 36$ where h is the height of the ball (in feet) and t is the number of seconds after the ball is dropped. After how many seconds does the ball hit the ground? *TAKS Obj. 5*

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.