60. ◤ **TAKS REASONING** In 1971, astronaut Alan Shepard hit a golf ball on the moon. The path of a golf ball hit at an angle of 45° and with a speed of 100 feet per second can be modeled by

$$y = -\frac{g}{10,000}x^2 + x$$

where x is the ball's horizontal position (in feet), y is the corresponding height (in feet), and g is the acceleration due to gravity (in feet per second squared).

a. Model Use the information in the diagram to write functions for the paths of a golf ball hit on Earth and a golf ball hit on the moon.

Earth: $g = 32$ ft/sec^2

Moon: $g = 5.3$ ft/sec^2
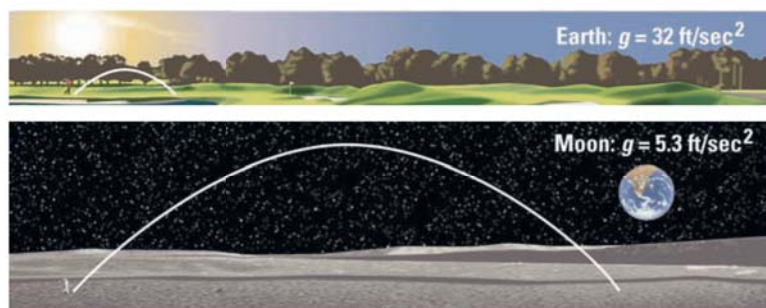
b. Graphing Calculator Graph the functions from part (a) on a graphing calculator. How far does the golf ball travel on Earth? on the moon?

c. Interpret *Compare* the distances traveled by a golf ball on Earth and on the moon. Your answer should include the following:

• a calculation of the ratio of the distances traveled

• a discussion of how the distances and values of g are related

61. CHALLENGE Lifeguards at a beach want to rope off a rectangular swimming section. They have P feet of rope with buoys. In terms of P, what is the maximum area that the swimming section can have?
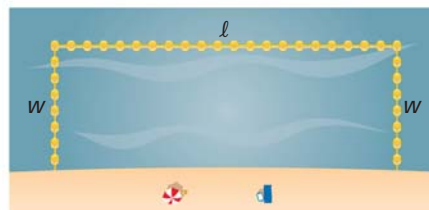
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MIXED REVIEW for TAKS

TAKS **PRACTICE** at classzone.com

62. ◤ **TAKS PRACTICE** Liz's high score in a video game is 1200 points less than three times her friend's high score. Let x represent her friend's high score. Which expression can be used to determine Liz's high score? *TAKS Obj. 2*

(A) $1200 - 3x$ **(B)** $\dfrac{x - 1200}{3}$ **(C)** $\dfrac{x}{3} - 1200$ **(D)** $3x - 1200$

63. ◤ **TAKS PRACTICE** The total cost, c, of a school banquet is given by $c = 25n + 1400$, where n is the total number of students attending the banquet. The total cost of the banquet was $9900. How many students attended the banquet? *TAKS Obj. 4*

(F) 177   **(G)** 340   **(H)** 396   **(J)** 452