# Unit 1: Radicals Lesson 1.3

## Game On!

(4) 1. State the restrictions on the variable in each expression.

a. $3\sqrt{3y^3}$

b. $\sqrt{6x^2}$

c. $\sqrt{x-4}$

d. $\sqrt{8x+4}$

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2. State the restrictions on the variable, solve the equation, and then verify the solution.

a. $\sqrt{\frac{y-4}{3}} = 2$

b. $5\sqrt{3x} = 15$

(4)

3. The time for a swing to move forward and backward can be determined by the formula $T = 2\pi\sqrt{\frac{L}{9.8}}$. $T$ represents the time, in seconds, taken by the swing to move through one complete cycle (forward and back) and $L$ represents the length of the rope supporting the swing.

   Determine the length of the rope supporting a swing that takes 3.4 seconds to move through one complete cycle. Show all steps and round the answer to the nearest tenth of a metre.

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You have completed *Lesson 1.3 Game On!*. Please proceed to the *Unit 1: Radicals Time Out*, on the next page of this *Workbook*.