

Quadratic Equation: _____

Zero: _____

Example 1: Verifying solutions to a quadratic equation (p. 374)

The flight time for a long-distance water ski jumper depends on the initial velocity of the jump and the angle of the ramp. For one particular jump, the ramp has a vertical height of 5 m above water level. The height of the ski jumper in flight, $h(t)$, in metres, over time, t , in seconds, can be modelled by the following function:

$$h(t) = 5.0 + 24.46t - 4.9t^2$$

How long did the skier on the right hold his flight pose?



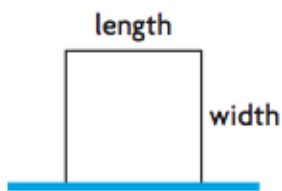
The skier holds his flight pose until he is 4.0 m above the water.

Roots: _____

Example 2: What are the roots for $x^2 - 6x + 9 = 0$?

Example 3: Graphing to determine the number of roots (p. 376)

Lamont runs a boarding kennel for dogs. He wants to construct a rectangular play space for the dogs, using 40 m of fencing and an existing fence as one side of the play space.



a) Write a function that describes the area, A , in square metres, of the play space for any width, w , in metres.



b) Write equations you could use to determine the widths for areas of 250 m^2 , 200 m^2 , and 150 m^2 .

c) Determine the number of possible widths for each equation using a graph.

Example 3: Solving a quadratic equation in non-standard form (p. 378)

Determine the roots of this quadratic equation. Verify your answers.

$$3x^2 - 6x + 5 = 2x(4 - x)$$