



## EXAMPLE 1: REAL ROOTS

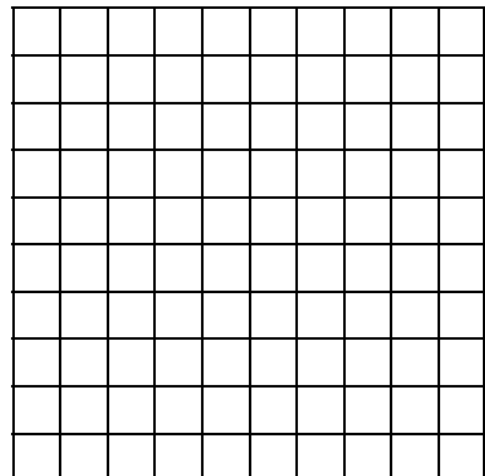
Use the quadratic formula to solve each quadratic equation. Where necessary, round to the nearest hundredth.

$$2x^2 + 9x + 6 = 0$$

$$4x^2 - 12x = -9$$

## EXAMPLE 2: USE THE QUADRATIC FORMULA TO SKETCH A PARABOLA

Find the x-intercepts, the vertex, and the equation of the axis of symmetry of the quadratic relation  $y = -5x^2 + 8x - 3$ . Sketch the Parabola.





## EXAMPLE 4: PATH OF A BASKETBALL

The path of a basketball after it is thrown from a height of 1.5m above the ground is given by the equation  $h = -0.25d^2 + 2d + 1.5$  where  $h$  is the height, in metres, and  $d$  is the horizontal distance in metres.

- a) How far has the ball travelled horizontally, to the nearest tenth of a metre, when it lands on the ground?

- b) Find the horizontal distance when the basketball is at a height of 4.5m above the ground.