1. Graph the following on a separate piece of graph paper. All graphs will 10X10 Graph except g. State the **axis of symmetry**, **vertex**, and **y** **intercept** for each graph. For **g** and **h** state **x intercepts** instead of y.

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1. Solve each of the following by **factoring** or **taking** **square** **roots**.

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1. A ball is thrown into the air with an initial velocity of 20ft/s and at an initial height of 5 ft. The height of the ball is modeled by the equation where h represents the height of the ball, in meters, and t represents time in seconds.
   1. How **long** does it take the ball to reach its maximum height?
   2. What is the ball’s **maximum** **height**?
   3. **When** does the ball hit the ground?
2. Jessica, who has a bionic arm, is crossing a bridge over a small gorge and decides to toss a coin

into the stream below for luck.  The distance of the coin above the water can be modeled by the

function where t measures the time in seconds and y measures the height, in feet, above the water.

* 1. What is the **maximum** **height** of the coin?
  2. How **long** after the coin is tossed into the air, does it reach its maximum height?
  3. **When** does the coin hit the water?

1. Use the **quadratic** **formula** to solve the following quadratics.

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1. Use the **discriminant** to determine how many solutions each quadratic has.
2. Use your calculator to find the solutions (zeros) to each function.