## ✒ Test 13 (Lessons 25–26): The Quadratic Formula, Distance Formula, and Midpoint Formula

**1)** Solve using the Quadratic Formula. Show all work.

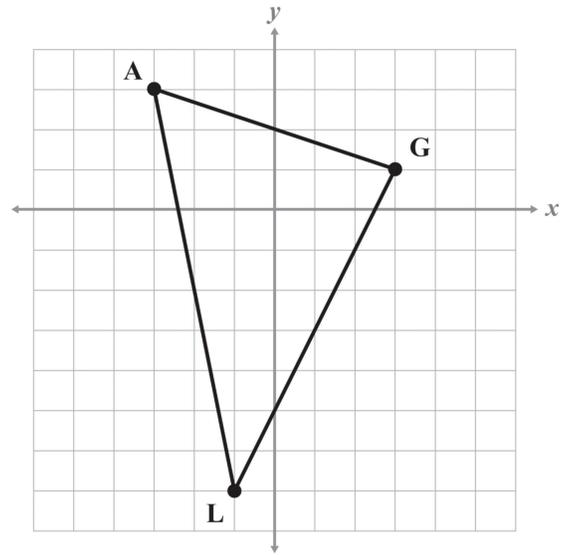$2x^2 = 3x + 9$

**2)** Calculate the distance between the $y$-intercept and the positive root using the equation from problem 1.

**Fill in the blanks.**

**3)** The _____ calculates the point that is equidistant from either endpoint.

**4)** When the discriminant is in the form $b^2 - 4ac < 0$, the roots will be _____.

**Use the graph to answer problems 5–6.**

5) Determine the midpoint of each side of triangle AGL.



6) Connect all of the midpoints to form a new triangle. Find the perimeter of the new triangle.

**Fill in the blanks.**

**7)** The _____ can be used to calculate the units between two

ordered pairs.

**8)** The quadratic formula can be used to determine the _____ of

a quadratic equation.

**9)** A slow-pitch softball pitcher releases the ball 2.25 feet above the ground with an initial velocity of 50 ft/s. If the batter hits the ball 2 feet above the ground, how long did it take for the ball to reach the batter? Recall $h = \frac{1}{2}at^2 + vt + s$ and $a = -32$.

**10)** Determine the type of roots using the discriminant. Explain.
$1.5x^2 + 4x = 0.2$