

Name:

Group 1

Result:

1. Solve the following inequalities

(4 points)

$$x^2 - 4x > 12$$

$$2x^2 + 1 < x$$

2. For what values of parameter m the equation:

(2 points)

$$2x^2 + 3x + m - 1 = 0$$

has two real solutions?

3. For what values of parameter k the inequality: *(3 points)*

$$kx^2 + (k + 3)x + k > 0$$

is true for all value of $x \in \mathbb{R}$?

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4. For what value of c is the line $y = 2x + c$ tangent to the parabola $y = x^2 + x + 3$? *(3 points)*

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5. On the same set of axes sketch the graphs of $y = x + 6$ and $y = x^2 - x - 2$. Clearly indicate all axes intercepts, vertex and the points of intersections. *(4 points)*