The purpose of this review is to verify your readiness for MTH 161.

You do NOT need to solve these problems. Simply review them and answer the three questions below.

- Do these math problems below look familiar to you?
- Have you learned these types of problems in prior math classes?
- If you reviewed this material, would you be able to solve most of these problems?

1. Simplify the following expressions.
   a. \((-2x^3y^6)^3\)  
   b. \(\frac{40x^3y^3}{5x^4y}\)  
   c. \((5a^2b^3) \cdot (3b^2c^3)\)

2. Given \(f(x) = -x^2 + 6x - 11\), identify the vertex, x- and y- intercepts and sketch the graph.

3. Factor the following completely.
   a. \(3b^3 - 15b^2 - 42b\)
   b. \(8x^3z - 27y^6z\)
   c. \(4x^2 - 8x - 16\)

4. Solve the following equations.
   a. \(2x^2 = x + 3\)
   b. \(\sqrt{x + 3} = 5\)
   c. \(\frac{3}{x} + \frac{2}{x+1} = \frac{3}{x+1}\)

5. Solve the inequality and sketch your solution on a number line.
   \[2x - 3 < 3x + 5\]

6. Find the equation of the line in Slope-intercept form passing through the points \((-2,5)\) and \((0,2)\).

**COURSE RECOMMENDATIONS BASED ON QUESTIONS ABOVE**

- If you answered “yes” to at least 2 of the above questions, you should consider enrolling in MTH 161.
- If you answered “yes” to 1 of the above questions, you should consider enrolling in MTH 161 + MDE 61.
- If you answered “no” to all 3 of the above questions, refer to the “Are you ready for MTH 154, 155, or Algebra?” guide.