ANALYZING QUADRATIC FUNCTIONS – Day 2

1. Graph $y = x^2 + 4x - 5$.

    a) Input equation into calculator $\boxed{y_1 =}$

    b) Press $\boxed{\text{GRAPH}}$

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2. Find the vertex of $y = x^2 + 4x - 5$.

    a) Is the vertex a maximum or a minimum? _____

    b) Press $\boxed{2^{nd}}$ $\boxed{\text{TRACE}}$ (this allows you to "CALCulate").

    c) Since the vertex is a _____ press $\boxed{3}$.

    d) For LEFT BOUND, use $\boxed{\leftarrow}$ to move the cursor to the LEFT of the vertex. Press $\boxed{\text{ENTER}}$

    e) For RIGHT BOUND, use $\boxed{\rightarrow}$ to move the cursor to the RIGHT of the vertex. Press $\boxed{\text{ENTER}}$

    f) For GUESS, press $\boxed{\text{ENTER}}$.

The vertex is _____. **The equation of the line of symmetry is** _____.

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3. Find the x-intercepts of $y = x^2 + 4x - 5$.

    a) Let $y_2 = 0$
    b) $\boxed{\text{Graph}}$
    c) Press 2nd $\boxed{\text{Trace}}$, this allows you to go to the CALCulate menu.
    d) Press $\boxed{5}$ to select "intersect"
    e) You will need to press $\boxed{\text{ENTER}}$ <u>two</u> times…when it prompts for "First Curve?" and "Second Curve?". The final prompt will ask "Guess?". Use $\boxed{\rightarrow}$ $\boxed{\leftarrow}$ to move the cursor close to one of the x-intercepts, then press $\boxed{\text{ENTER}}$

The x-intercepts are _____ **and** _____.

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4. Recall:

    For quadratic functions, these four words all mean the same thing and are used interchangably:

_____, _____, _____ , & _____

5. Find the roots of $y = x^2 + 7x + 10$ by hand *and* in the calculator.

6. Find the vertex, roots, and y-intercept of $y = -2x^2 + x + 7$.

7. Find the zeros of $y = 2x - 6$.