6.4.1 Factoring

Part B

Using the diagrams in Part A, find the $x$- and $y$-intercepts for each quadratic relation. Use the information to make the sketch on the grid provided.

1. standard form:
   \[ y = x^2 + 3x + 2 \]

   factored form:
   \[ y = (x + 1)(x + 2) \]

   $y$-intercept:
   \[ (0, 2) \]

   first $x$-intercept:
   \[ (-1, 0) \]

   second $x$-intercept:
   \[ (-2, 0) \]

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2. standard form: 
   \( y = x^2 + 5x + 4 \)

factored form: 
\( y = (x \hspace{1cm})(x \hspace{1cm}) \)

- \( y \)-intercept: 
- first \( x \)-intercept: 
- second \( x \)-intercept:
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3. standard form:
   \[ y = x^2 + 6x + 5 \]

   factored form:
   \[ y = (x \quad)(x \quad) \]

   y-intercept:

   first x-intercept:

   second x-intercept:
5. In what way is the last example different from the others?

Only crosses $x$ once