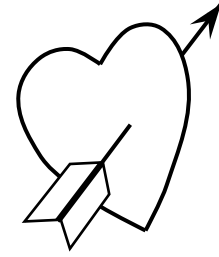


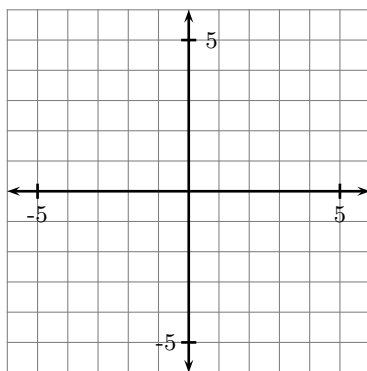
Name: _____



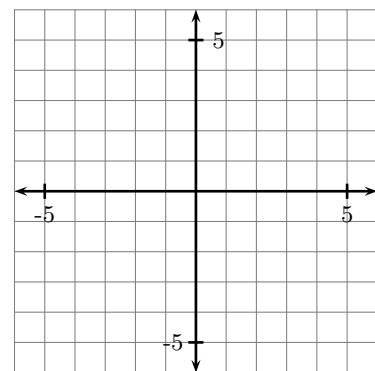
Do **EXACTLY THREE** of the five **numbered** exercises on this part of the exam. Each numbered exercise is worth 6 points and **you are NOT to use a graphing calculator for this part of the exam.**

1. (a) Graph $y = \frac{3}{2}x - 2$ on the grid below and to the left. Clearly indicate at least two points on the graph.
- (b) Graph $y = -\frac{1}{2}x^2 + 2x$ on the grid below and to the right. Clearly indicate at least three points on the graph.

Show any work you do in the space between the two graphs or below.



$$y = \frac{3}{2}x - 2$$

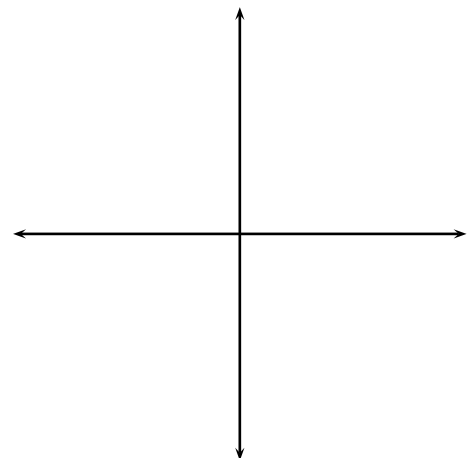


$$y = -\frac{1}{2}x^2 + 2x$$

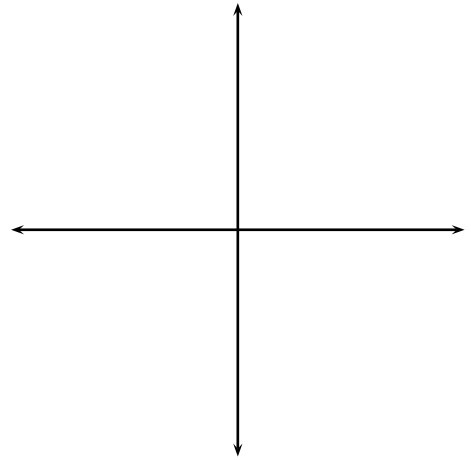
2. Consider the function

$$P(x) = -5x^4 + bx^3 + cx^2 + dx + 3,$$

where b , c and d are unknown constants. On the grid to the right, sketch what its graph might look like, to the best of your knowledge. **Label any intercepts that you can with their value(s).**



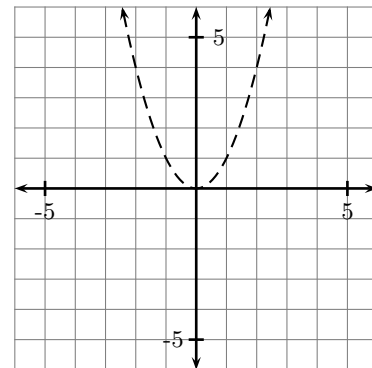
3. Sketch the graph of $y = -\frac{1}{6}(x + 2)(x - 3)^2$ on the grid to the right. Label each intercept with its value.



4. Sketch the graph of

$$y = \frac{1}{2}(x + 1)^2 - 3$$

on the coordinate grid to the right. The graph already shown is that of $y = x^2$. **The only point you need to locate exactly is the vertex; indicate clearly whether the graph is wider or narrower than that of $y = x^2$.**



5. (a) One x -intercept of a parabola is $(5, 0)$ and the vertex is $(1, 6)$. Find the other x -intercept. (If you know how to do this it should be pretty easy. Try a picture.)

Other x -intercept: (_____ , _____)

- (b) Fill in the first blank with either *minimum* or *maximum*, and fill in the others with numbers: “The function $g(x) = 15 + 2x - x^2$ has a _____ value of _____ at $x =$ _____.” **In the space below, indicate how you obtain your answer.**