

**Instructions: This is a list of some material that is essential prerequisite for this course. That is, your instructor expects that you have a definite idea of the notions expounded below and that you be able to solve the problems below without any review. If you find yourself having trouble on some items below you should seek immediate help from your instructor or from the tutors in the Learning Laboratory.**

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Essential prerequisites include:

- (a) Solving linear equations.
  - (b) Factoring polynomials.
  - (c) Clearing fractions.
  - (d) Completing the square.
  - (e) The Quadratic Formula.
  - (f) Graphing straight lines by inspection.
  - (g) Evaluating functions.
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You should be able to quickly answer all questions below without needing any review.

1. Using the graph of  $y = f(x)$  in figure 1, graph the following curves.

(a)  $y = f(x) + 1$

(d)  $y = 2f(x)$

(b)  $y = f(x + 1)$

(e)  $y = f(2x)$

(c)  $y = f(x + 1) + 1$

(f)  $y = f^{-1}(x)$

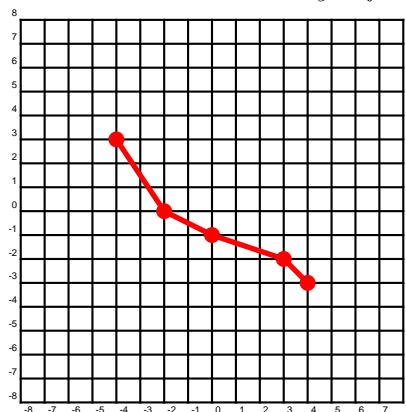


Figure 1: Problem 1.

2. If  $x^2 + 4x + 6 = A(x + a)^2 + b^2$ , find  $A$ ,  $a$ , and  $b$ .

3. Factor  $x^3 + 2x^2 - 15x$ .

4. Draw the straight line having slope 3 and  $x$ -intercept  $(1, 0)$ .