

Chapter 7 Prerequisite Skills

1. Evaluate.

- a) $-2.4(-3.2)$
 b) $-1.1[2.3 - (-0.5)]$
 c) $(4.51 - 5.32)(5.17 - 6.57)$
 d) $-4.36 + 1.2[2.8 + (-3.5)]$

2. For each function, create a table of values.
 Use the table of values to draw the graph of the function.

- a) $y = -3x - 2$ b) $y = \frac{2}{3}x + 3$
 c) $f(x) = x^2 - 4$ d) $g(s) = -s^2 + 3s - 2$

3. For each function in #2, identify the following:

- i) the domain and range
 ii) the x -intercept(s)
 iii) the y -intercept
 iv) the maximum and minimum values, if any exist

4. Simplify each expression whenever possible. Identify any non-permissible values.

- a) $\frac{x-4}{x+3}$ b) $\frac{x^2-4x+4}{x^2-4}$
 c) $\frac{-4(x^2-y^2)}{x-y}$ d) $\frac{12x^2-48y^2}{12} \div \frac{3}{x+2y}$

5. Write the equation of a line that goes through each pair of points.

- a) (5, 1) and (3, -7)
 b) (5, -8) and (1, 4)
 c) (3, 6) and (0, 0)
 d) (8, -3) and (-4, 6)

6. Sketch the graph of the function $f(x) = 2x^2 - 7x + 3$. Identify the following:

- a) the coordinates of the vertex
 b) the equation of the axis of symmetry
 c) the direction of opening
 d) the maximum or minimum value
 e) the domain and range
 f) the x -intercepts and y -intercept

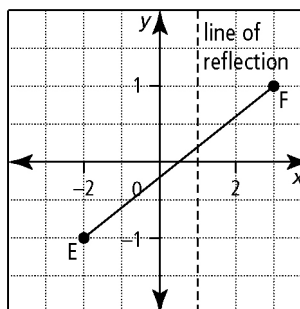
7. Factor each quadratic equation.

- a) $4x^2 - 13x + 9$
 b) $\frac{1}{2}x^2 - \frac{3}{2}x - 2$
 c) $5p^2 + 13p - 6$
 d) $3(v+1)^2 + 10(v+1) + 7$

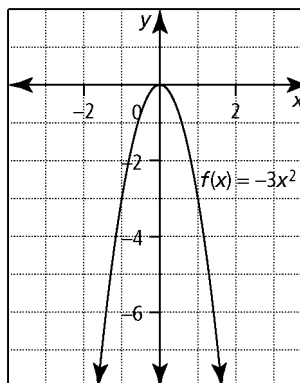
8. Determine the roots of each quadratic equation.

- a) $-3x^2 - 2x + 5 = 0$ b) $3x^2 - 4x - 1 = 0$
 c) $25x^2 + 90x + 81 = 0$ d) $2x^2 - 5x = 3$

9. Sketch the reflection of EF using the given line of reflection.



10. Sketch the reflection of $f(x) = -3x^2$ through the x -axis. Label the equation of the reflection.



11. Solve each inequality and verify the solution.

- a) $3(x+2) \geq 9$
 b) $-2(x-5) \geq 5$
 c) $(2x-4) \geq 8$
 d) $-1(2x-4) \geq 8$

