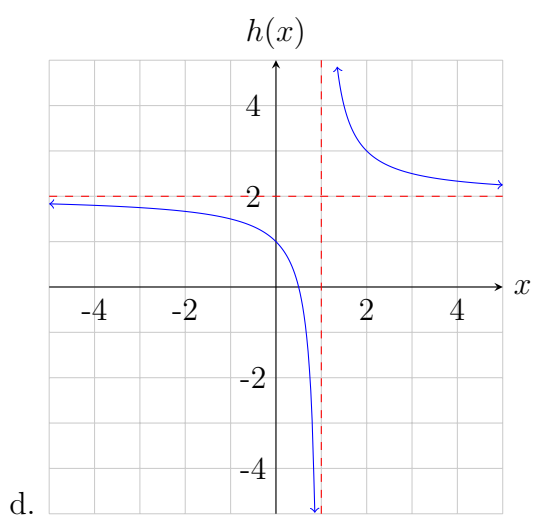
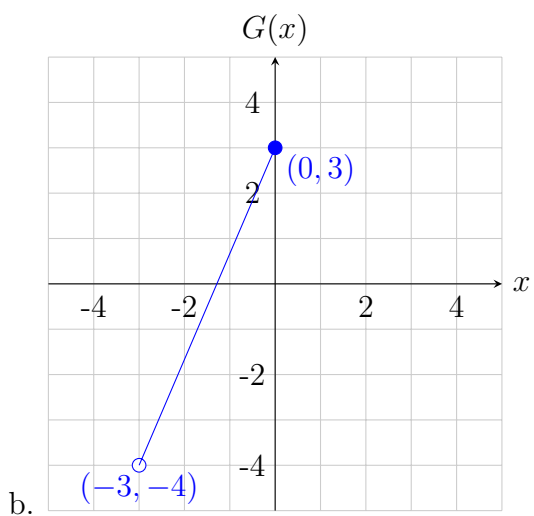
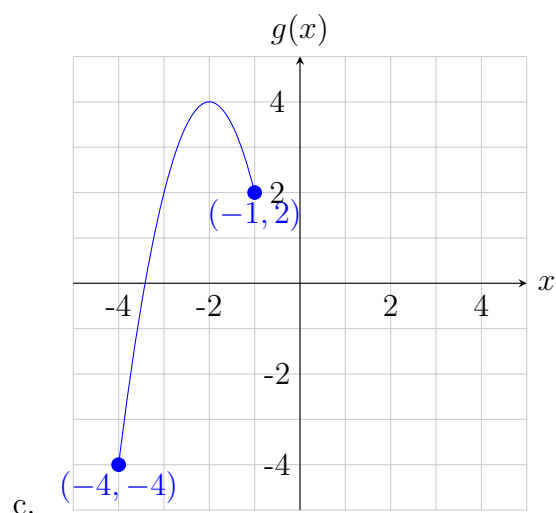
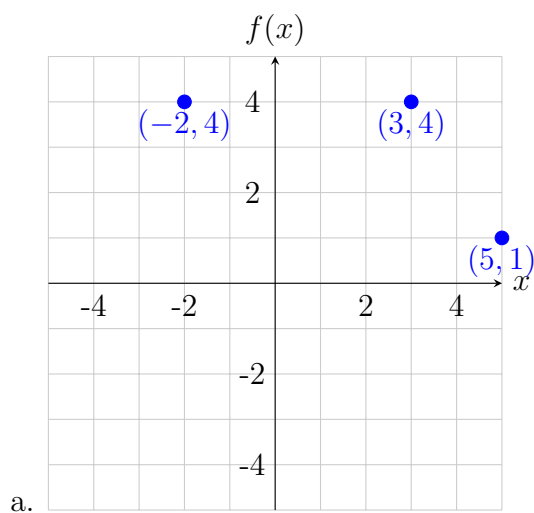


1. Given the following function, determine their domain and range.



2. Determine the domain of the following functions.

a. $f(x) = 7x - 8$

f. $G(t) = \frac{16t - 11}{t^2 + 7t - 98}$

b. $g(x) = \frac{2}{5}x^3$

g. $m(x) = \frac{x + 16}{x^2 - 361}$

c. $F(x) = \frac{5x}{x - 5}$

h. $k(t) = \sqrt{6 + 11t}$

d. $K(x) = -\frac{3x + 5}{x^2 - x - 30}$

i. $H(t) = \frac{\sqrt{4 + t}}{2t - 6}$

e. $h(x) = \frac{9x + 9}{x^2 - 81}$

j. $f(t) = \frac{8}{\sqrt{x - 1}}$

3. Determine the domain and range of the following functions.

a. $f(x) = -3x + 1$

c. $F(x) = -\sqrt{2x + 6}$

b. $g(x) = \sqrt{x - 5}$

d. $K(x) = x^2 - 4x + 12$

4. Carmen bought a used car for \$8,400. The car's value decreases at a constant rate each year. After 10 years, the value decreased to \$5,400. Determine the symbolic form for a function modeling the value of the car after a given number of years. What is the domain and range of this function in context of this scenario?
5. Assume a tree grows at a constant rate. When the tree was planted, it was 2.1 feet tall. After 10 years, the tree grew to 8.1 feet tall. Determine the symbolic form for a function modeling the height of the tree given a certain number of years. If the tree can live 170 years, determine the domain and range of the function in context of this situation.
6. You are to build a rectangular sheep pen next to a river. There is no need to build a fence along the river, so you only need to build three sides. You have a total of 480 feet of fencing that you are to use. Determine a function which models the area of the pen given its width in feet. What is the domain and range of this function and what is the maximum area you could have for the pen?