Worksheet – Functions

Let \( f(x) = 3x^2 - 4x + 2 \), evaluate the following:

a. \( f(-2) \)

b. \( f(5) \)

c. \( f(a-2) \)

d. \( f(3x) \)

Identify the domain of the function

a. \( f(x) = \sqrt{x^2 - 49} \)

b. \( g(x) = \frac{3x - 2}{5x - 20} \)

c. \( h(s) = |s - 3| \)

A manufacturer produces toasters at a cost of $18, and has a fixed cost of $300 per day. Each toaster is sold for $22. Let \( x \) represent the number of toasters produced each day.

a. Write the total cost, \( C \), as a function of \( x \).

b. Write the total revenue, \( R \), as a function of \( x \).

c. Write the profit, \( P \), as a function of \( x \).

d. How many toasters need to be sold for the company to break even. (That is for the company to have a profit of 0.)