

Assignment 1.1.1



1-4.

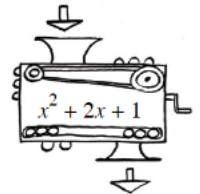
For the function $f(x) = \frac{1}{x-2}$, determine each of the following values.

- What is $f(4)$? (This means calculate the output of the function when $x = 4$.)
- What is x when $f(x) = 1$? (This means determine the input that gives an output of 1.)

1-5.

Carmichael made a function machine. The inner workings of the machine are visible in the diagram at right. What will the output be in each of the following cases?

- If 3 is dropped in?
- If -4 is dropped in?
- If -22.872 is dropped in?



1-6.

Angelica is working with two function machines, $g(x) = \sqrt{x-5}$ and $h(x) = x^2 - 6$. She wants to stack the two machines so that the output of the first machine becomes the input of the second. Her beginning input is 6.

- In what order must she put the machines to get a final output of 5?
- Is it possible for her to get a final output of -5 ? If so, show how she could do that. If not, explain why not.

1-9.

Solve each of the following equations. Be sure to check your solutions.

a. $4(x - 1) - 2(3x + 5) = -3x - 1$

b. $3x - 5 = 2.5x + 3 - (x - 4)$

1-10.

Multiply each expression

a. $(5m - 1)(m + 2)$

b. $(6 - x)(2 + x)$

c. $(5x - y)^2$

d. $3x(2x - 5y + 4)$