

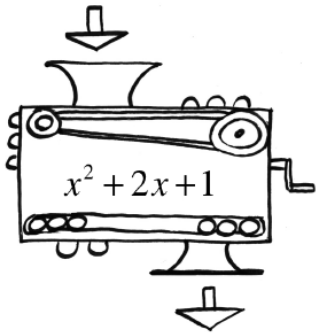
Practice 1.1.1

Remember to show your work!

1-4. For the function $f(x) = \frac{1}{x-2}$, determine each of the following values.

<p>a. What is $f(4)$? (This means calculate the output of the function when $x=4$.)</p>	<p>b. What is x when $f(x)=1$? (This means determine the input that gives an output of 1.)</p>
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1-5. Carmichael made a function machine. The inner workings of the machine are visible in the diagram below. What will the output be in each of the following cases?



a. If 3 is dropped in?

b. If -4 is dropped in?

c. 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.

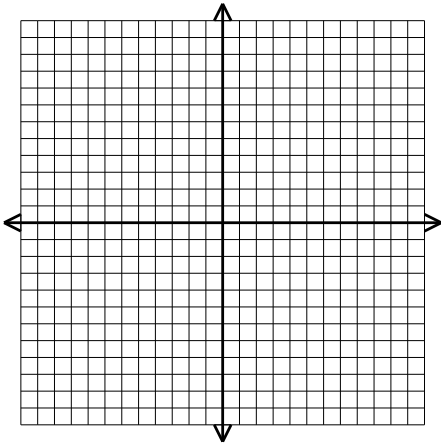
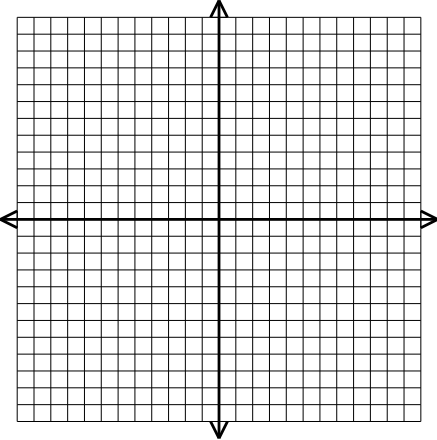
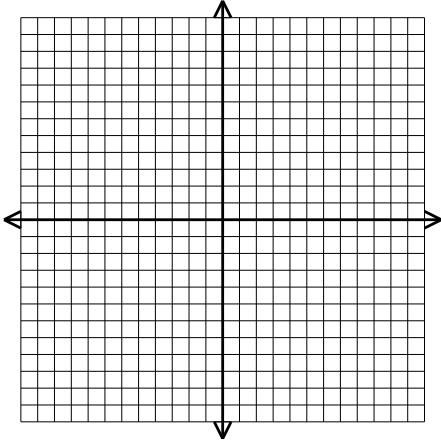
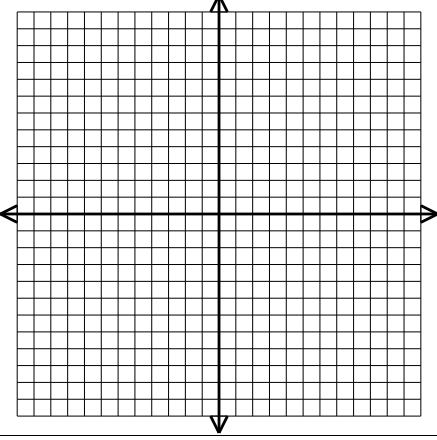
a. In what order must she put the machines to get a final output of 5?

b. 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.

1-7. In this course, you will learn strategies that allow you to make sketches of many different types of graphs. However, when the directions tell you to *make a complete graph*, this means you must do more than make a quick sketch. To make a complete graph, you need to:

- Use Graph Paper or a provided set of axes.
- Plot Points Accurately.
- Scale and label axes.
- Label Key Points.

On separate sets of axes, *make a complete graph* of each of the following functions.

<p>a. $y = -2x + 7$</p> 	<p>b. $y = \frac{3}{5}x + 1$</p> 
<p>c. $3x + 2y = 6$</p> 	<p>d. $y = x^2$</p> 

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