Advanced Algebra Tutor

Worksheet 1

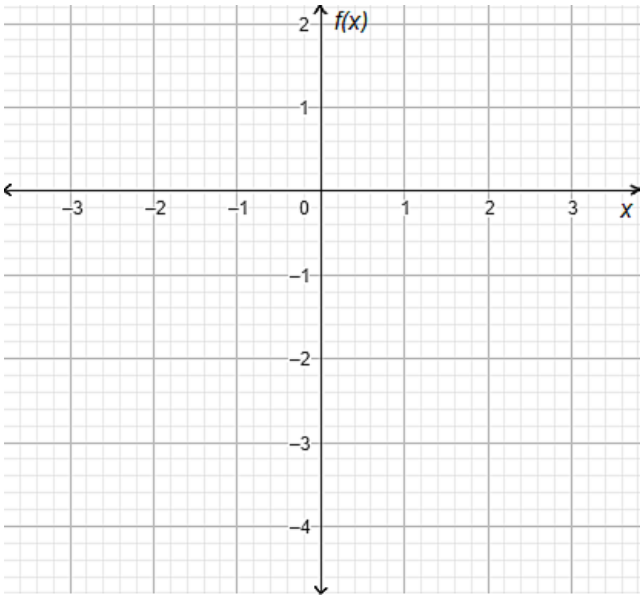
Graphs of Functions

Advanced Algebra Tutor - Worksheet 1 – Graphs of Functions

1. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = \frac{1}{2}x^2 - 4$$

x	Calculations	$f(x)$



2. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

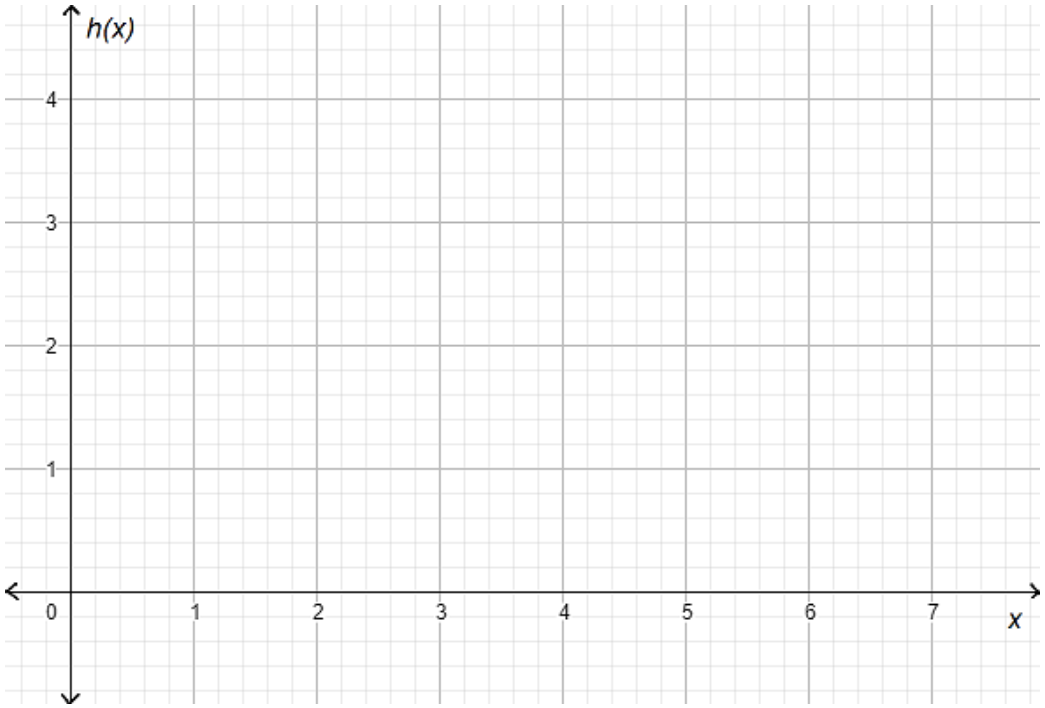
$$g(x) = x^3 - 1$$

x	Calculations	$g(x)$

3. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

$$h(x) = \frac{1}{2}\sqrt{x} + 2$$

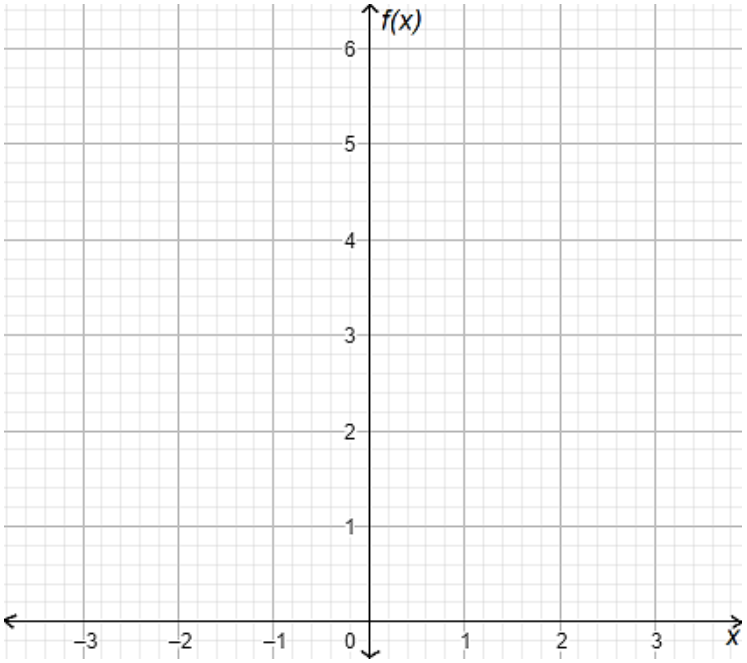
x	Calculations	$h(x)$



4. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = \frac{1}{4}x^2 + 2$$

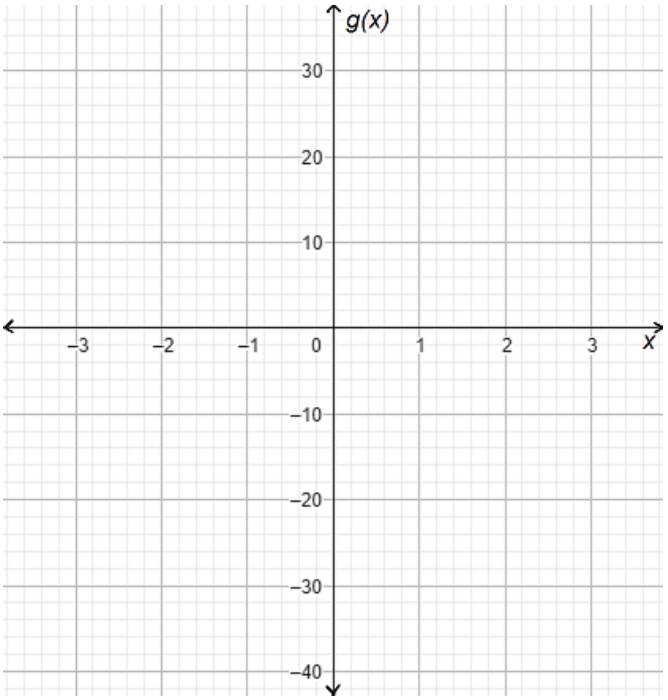
x	Calculations	$f(x)$



5. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = x^3 + 1$$

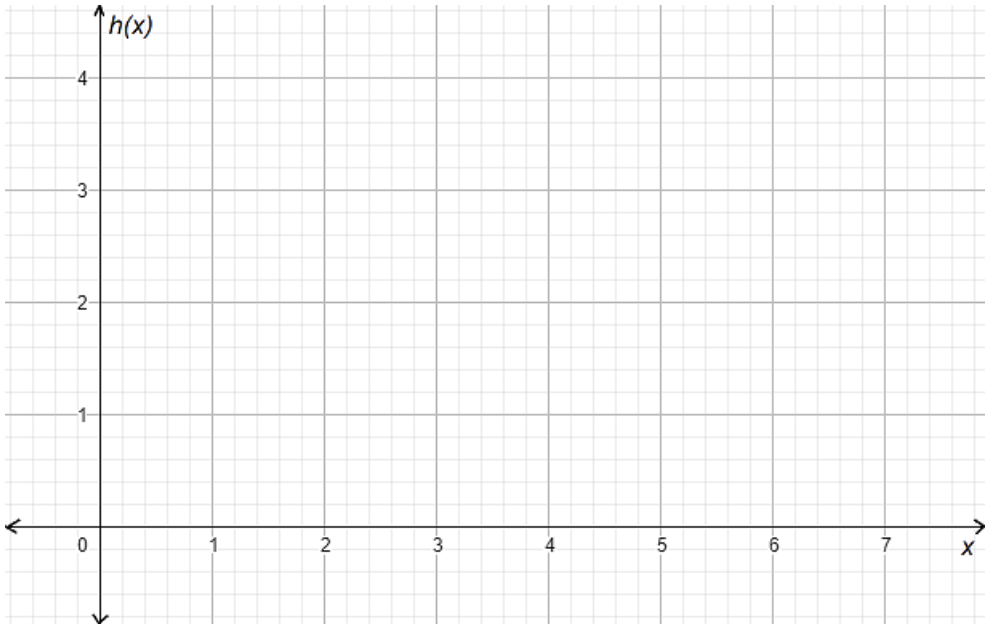
x	Calculations	$g(x)$



6. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

$$h(x) = -\frac{1}{2}\sqrt{x} + 3$$

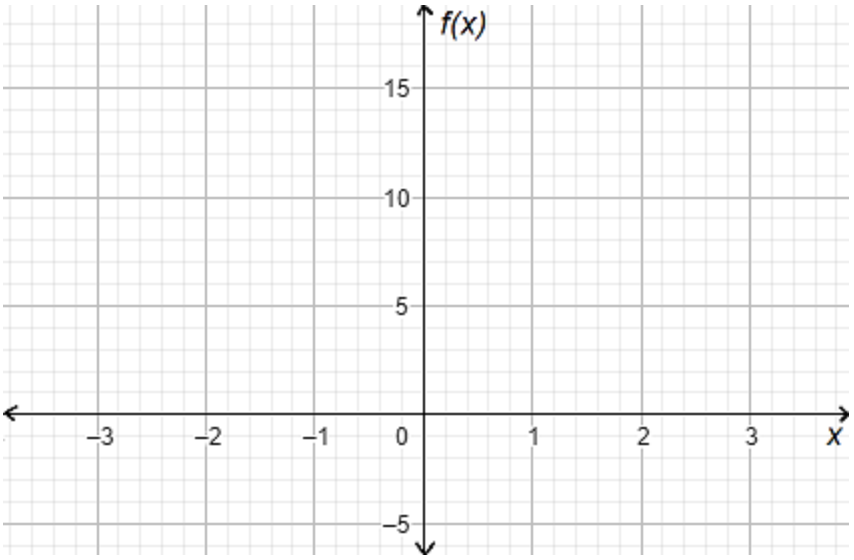
x	Calculations	$h(x)$



7. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = x^2 - 2x - 3$$

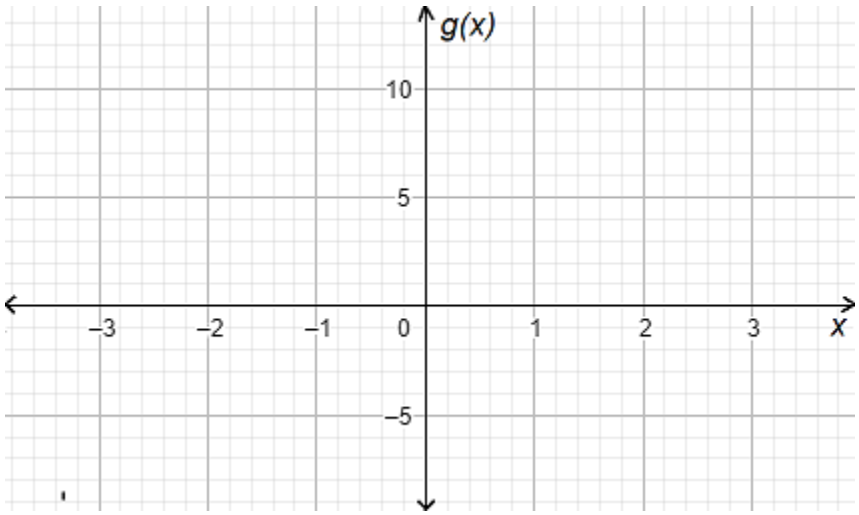
x	Calculations	$f(x)$



8. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = \frac{1}{4}x^3 + 2$$

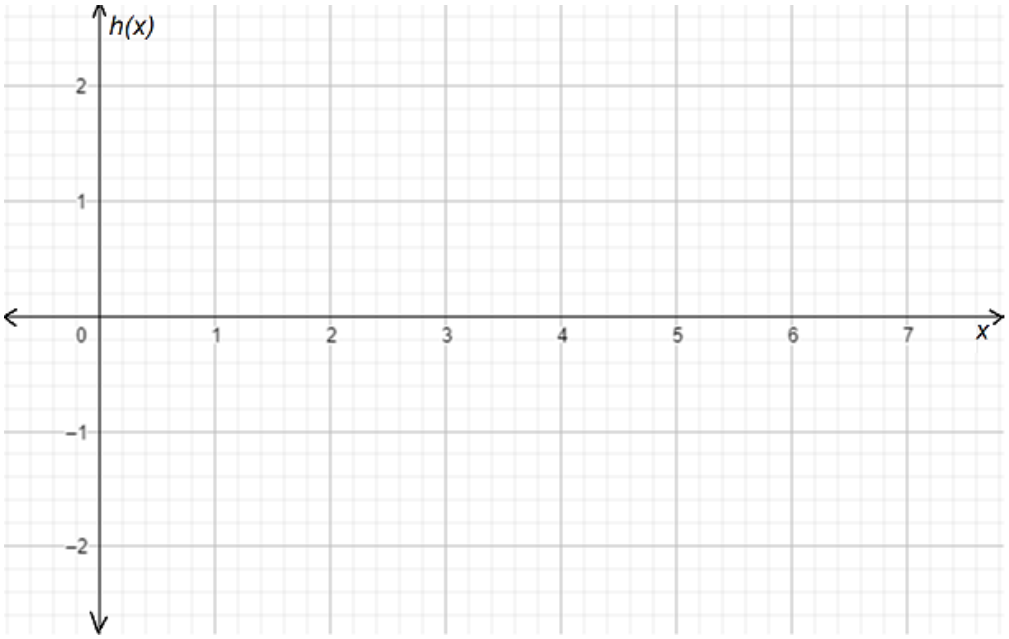
x	Calculations	$g(x)$



9. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

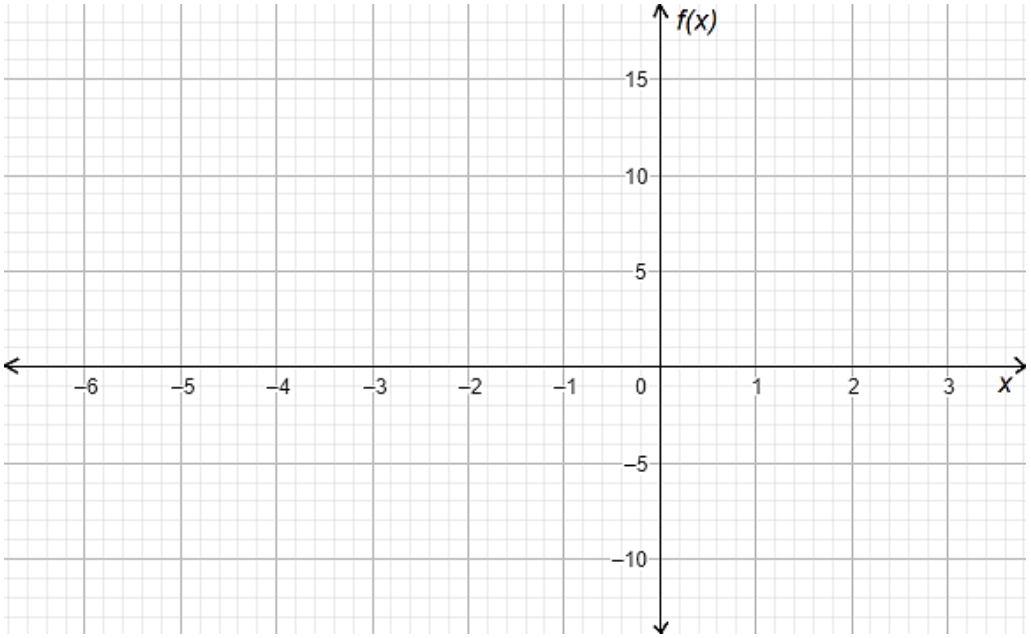
$$h(x) = \frac{1}{4}\sqrt{3x} - 2$$

x	Calculations	$h(x)$



10. Use a table of values from $x = -6$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = x^2 + 4x - 4$$

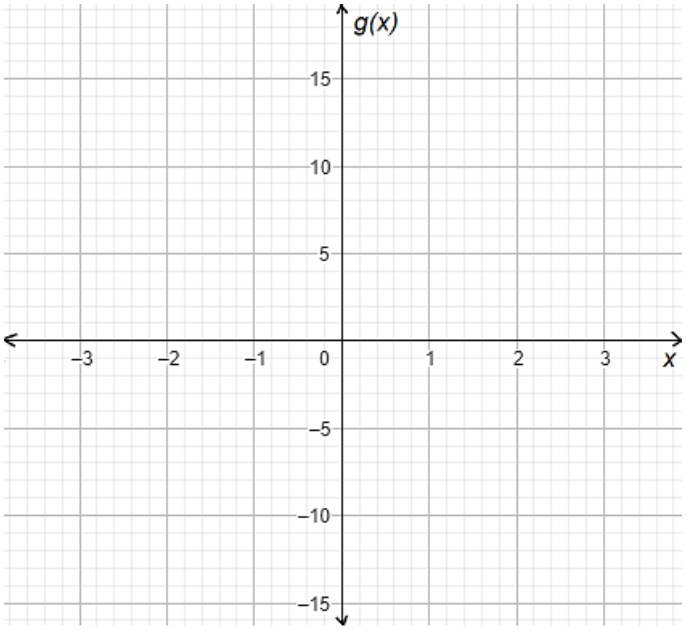


x	Calculations	$f(x)$

11. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = \frac{1}{2}x^3 - 3$$

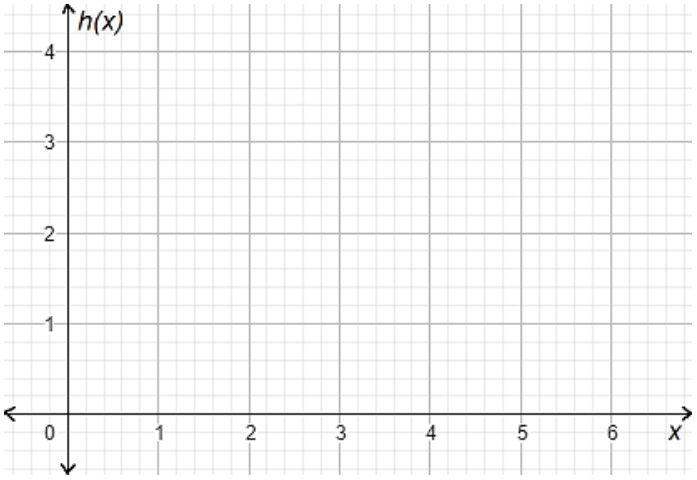
x	Calculations	$g(x)$



12. Use a table of values from $x = 0$ to $x = 6$ to graph the following function on the quadrant plane below.

$$h(x) = -\sqrt{x} + 4$$

x	Calculations	$h(x)$



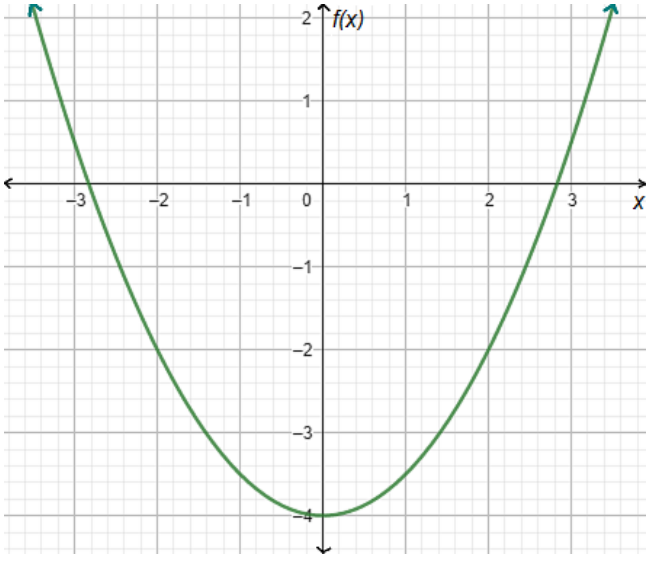
Answers - Advanced Algebra Tutor - Worksheet 1 – Graphs of Functions

1. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = \frac{1}{2}x^2 - 4$$

Answer:

x	Calculations	$f(x)$
-3	$\frac{1}{2}(-3)^2 - 4$	0.5
-2	$\frac{1}{2}(-2)^2 - 4$	-2
-1	$\frac{1}{2}(-1)^2 - 4$	-3.5
0	$\frac{1}{2}(0)^2 - 4$	-4
1	$\frac{1}{2}(1)^2 - 4$	-3.5
2	$\frac{1}{2}(2)^2 - 4$	-2
3	$\frac{1}{2}(3)^2 - 4$	0.5

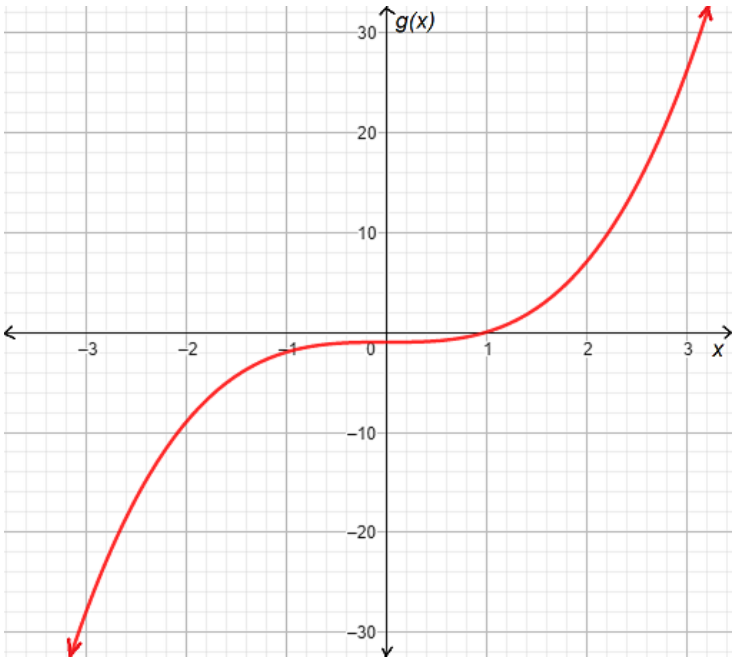


2. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = x^3 - 1$$

Answer:

x	Calculations	$f(x)$
-3	$(-3)^3 - 1$	-28
-2	$(-2)^3 - 1$	-9
-1	$(-1)^3 - 1$	-2
0	$(0)^3 - 1$	-1
1	$(1)^3 - 1$	0
2	$(2)^3 - 1$	7
3	$(3)^3 - 1$	26

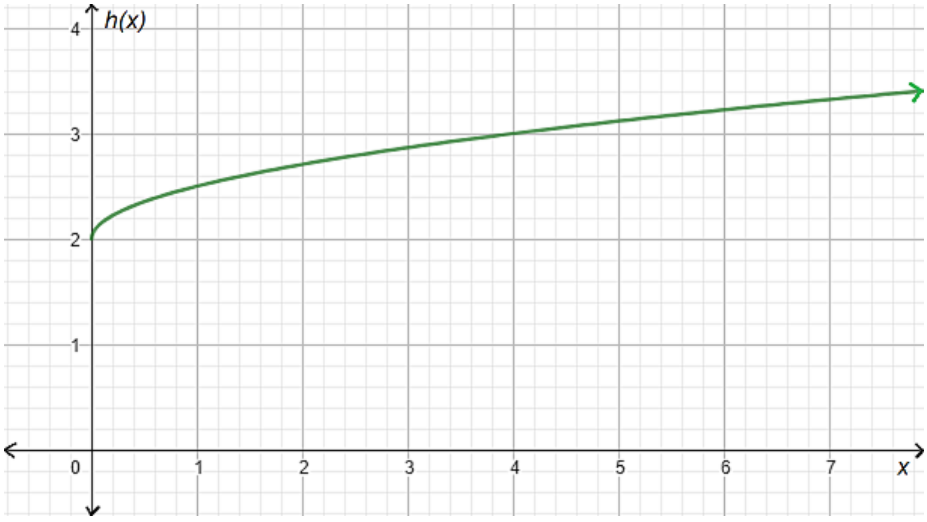


3. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

$$h(x) = \frac{1}{2}\sqrt{x} + 2$$

Answer:

x	Calculations	$f(x)$
0	$\frac{1}{2}\sqrt{0} + 2$	2
1	$\frac{1}{2}\sqrt{1} + 2$	2.5
2	$\frac{1}{2}\sqrt{2} + 2$	2.7
3	$\frac{1}{2}\sqrt{3} + 2$	2.9
4	$\frac{1}{2}\sqrt{4} + 2$	3
5	$\frac{1}{2}\sqrt{5} + 2$	3.1
6	$\frac{1}{2}\sqrt{6} + 2$	3.2
7	$\frac{1}{2}\sqrt{7} + 2$	3.3

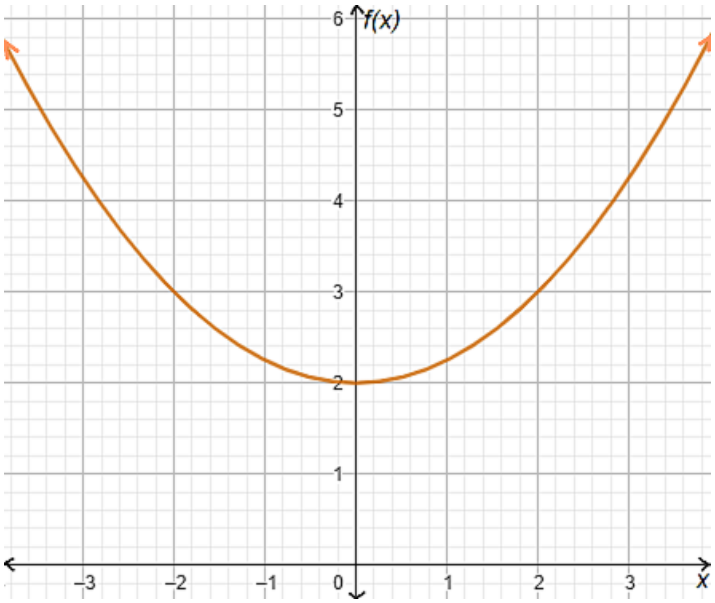


4. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = \frac{1}{4}x^2 + 2$$

Answer:

x	Calculations	$f(x)$
-3	$\frac{1}{4}(-3)^2 + 2$	4.25
-2	$\frac{1}{4}(-2)^2 + 2$	3
-1	$\frac{1}{4}(-1)^2 + 2$	2.25
0	$\frac{1}{4}(0)^2 + 2$	2
1	$\frac{1}{4}(1)^2 + 2$	2.25
2	$\frac{1}{4}(2)^2 + 2$	3
3	$\frac{1}{4}(3)^2 + 2$	4.25

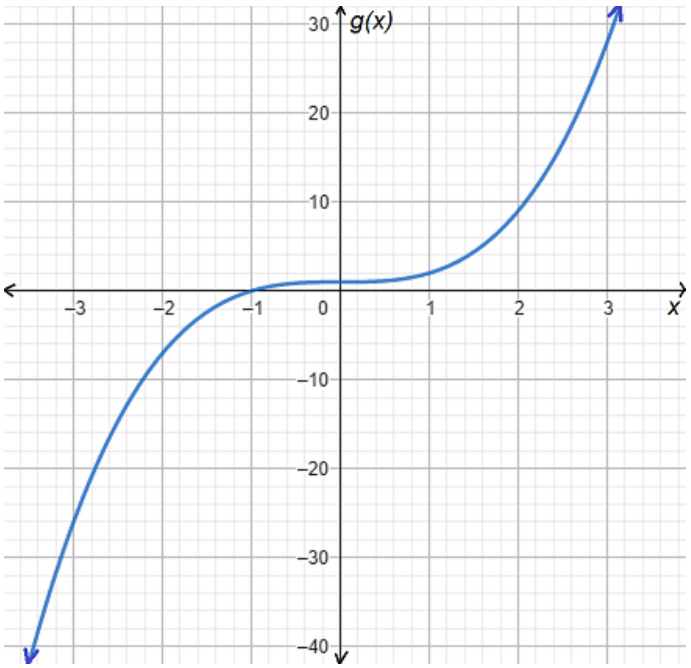


5. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = x^3 + 1$$

Answer:

x	Calculations	$f(x)$
-3	$(-3)^3 + 1$	-26
-2	$(-2)^3 + 1$	-7
-1	$(-1)^3 + 1$	0
0	$(0)^3 + 1$	1
1	$(1)^3 + 1$	2
2	$(2)^3 + 1$	9
3	$(3)^3 + 1$	28

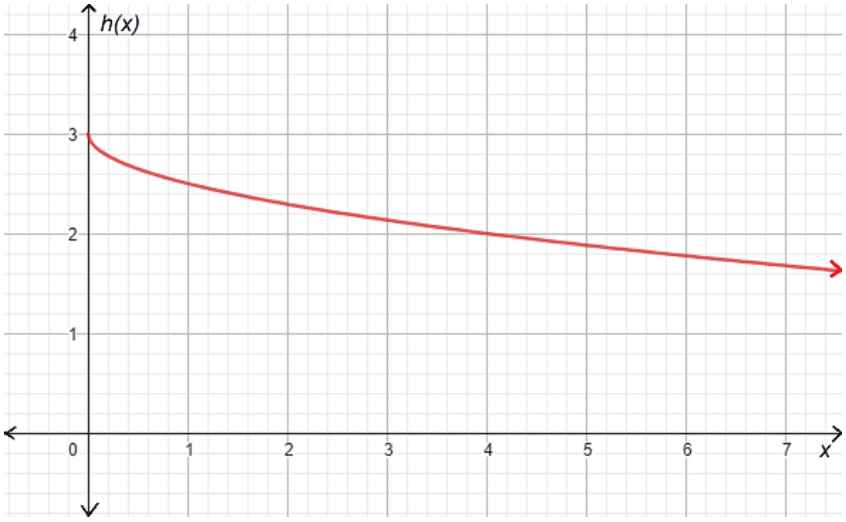


6. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

$$h(x) = -\frac{1}{2}\sqrt{x} + 3$$

Answer:

x	Calculations	$f(x)$
0	$-\frac{1}{2}\sqrt{0} + 3$	3
1	$-\frac{1}{2}\sqrt{1} + 3$	2.5
2	$-\frac{1}{2}\sqrt{2} + 3$	2.3
3	$-\frac{1}{2}\sqrt{3} + 3$	2.1
4	$-\frac{1}{2}\sqrt{4} + 3$	2
5	$-\frac{1}{2}\sqrt{5} + 3$	1.9
6	$-\frac{1}{2}\sqrt{6} + 3$	1.8
7	$-\frac{1}{2}\sqrt{7} + 3$	1.7

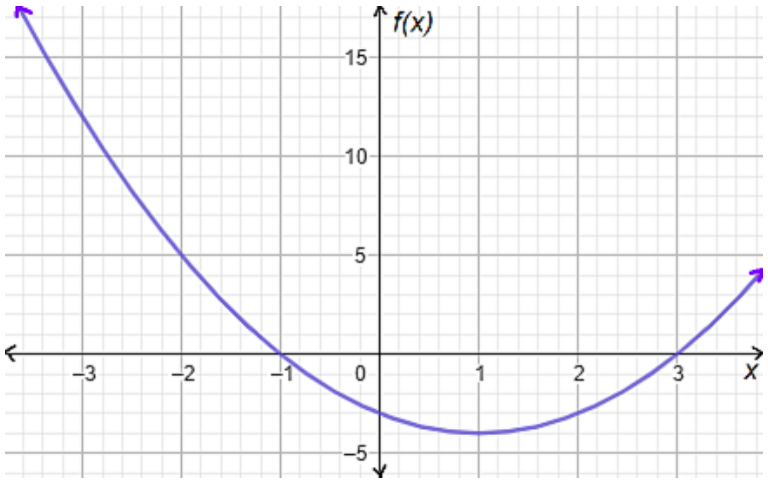


7. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = x^2 - 2x - 3$$

Answer:

x	Calculations	$f(x)$
-3	$(-3)^2 - 2(-3) - 3$	12
-2	$(-2)^2 - 2(-2) - 3$	5
-1	$(-1)^2 - 2(-1) - 3$	0
0	$(0)^2 - 2(0) - 3$	-3
1	$(1)^2 - 2(1) - 3$	-4
2	$(2)^2 - 2(2) - 3$	-3
3	$(3)^2 - 2(3) - 3$	0

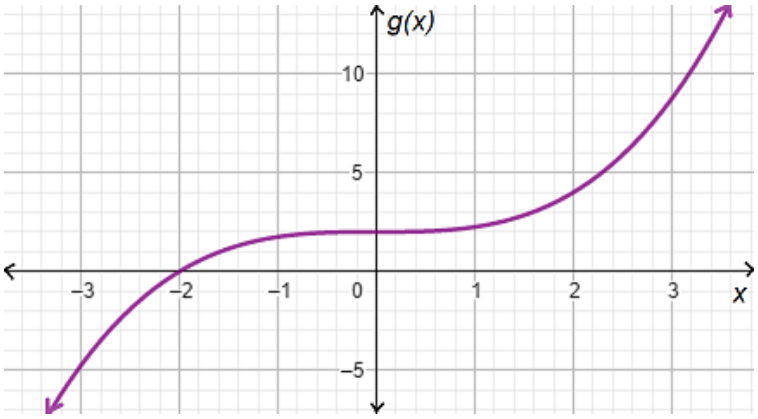


8. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = \frac{1}{4}x^3 + 2$$

Answer:

x	Calculations	$g(x)$
-3	$\frac{1}{4}(-3)^3 + 2$	-4.75
-2	$\frac{1}{4}(-2)^3 + 2$	0
-1	$\frac{1}{4}(-1)^3 + 2$	1.75
0	$\frac{1}{4}(0)^3 + 2$	2
1	$\frac{1}{4}(1)^3 + 2$	2.25
2	$\frac{1}{4}(2)^3 + 2$	4
3	$\frac{1}{4}(3)^3 + 2$	8.75



9. Use a table of values from $x = 0$ to $x = 7$ to graph the following function on the quadrant plane below.

$$h(x) = \frac{1}{4}\sqrt{3x} - 2$$

Answer:

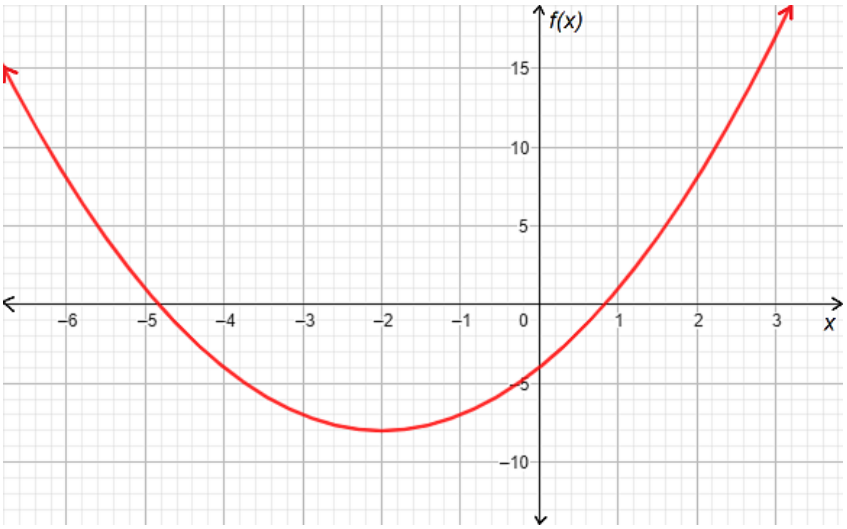
x	Calculations	$f(x)$
0	$\frac{1}{4}\sqrt{3(0)} - 2$	-2
1	$\frac{1}{4}\sqrt{3(1)} - 2$	-1.6
2	$\frac{1}{4}\sqrt{3(2)} - 2$	-1.4
3	$\frac{1}{4}\sqrt{3(3)} - 2$	-1.25
4	$\frac{1}{4}\sqrt{3(4)} - 2$	-1.1
5	$\frac{1}{4}\sqrt{3(5)} - 2$	-1.0
6	$\frac{1}{4}\sqrt{3(6)} - 2$	-0.9
7	$\frac{1}{4}\sqrt{3(7)} - 2$	-0.8

10. Use a table of values from $x = -6$ to $x = 3$ to graph the following function on the quadrant plane below.

$$f(x) = x^2 + 4x - 4$$

Answer:

x	Calculations	$f(x)$
-6	$(-6)^2 + 4(-6) - 4$	8
-5	$(-5)^2 + 4(-5) - 4$	1
-4	$(-4)^2 + 4(-4) - 4$	-4
-3	$(-3)^2 + 4(-3) - 4$	-7
-2	$(-2)^2 + 4(-2) - 4$	-8
-1	$(-1)^2 + 4(-1) - 4$	-7
0	$(0)^2 + 4(0) - 4$	-4
1	$(1)^2 + 4(1) - 4$	1
2	$(2)^2 + 4(2) - 4$	8
3	$(3)^2 + 4(3) - 4$	17

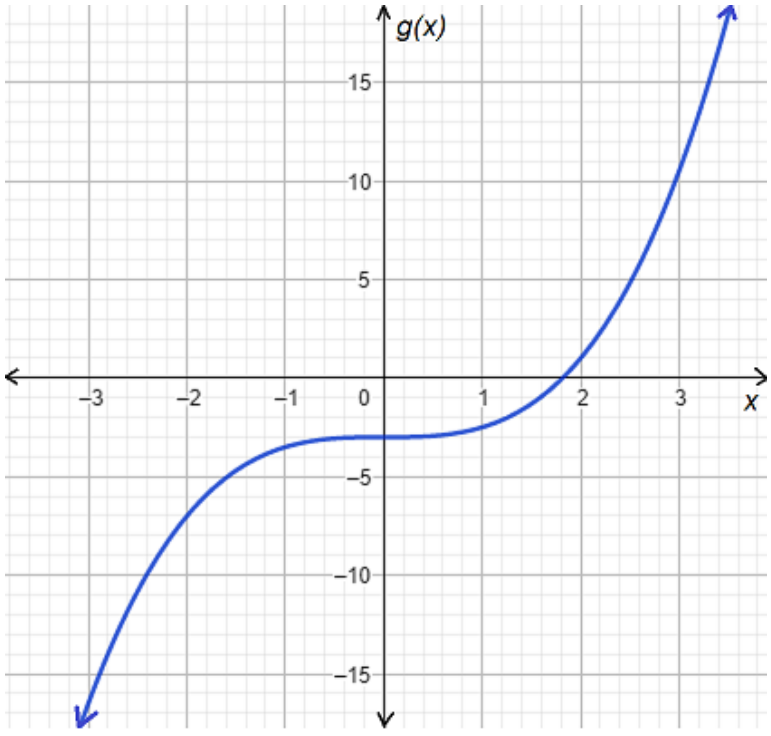


11. Use a table of values from $x = -3$ to $x = 3$ to graph the following function on the quadrant plane below.

$$g(x) = \frac{1}{2}x^3 - 3$$

Answer:

x	Calculations	$f(x)$
-3	$\frac{1}{2}(-3)^3 - 3$	-16.5
-2	$\frac{1}{2}(-2)^3 - 3$	-7
-1	$\frac{1}{2}(-1)^3 - 3$	-3.5
0	$\frac{1}{2}(0)^3 - 3$	-3
1	$\frac{1}{2}(1)^3 - 3$	-2.5
2	$\frac{1}{2}(2)^3 - 3$	1
3	$\frac{1}{2}(3)^3 - 3$	10.5



12. Use a table of values from $x = 0$ to $x = 6$ to graph the following function on the quadrant plane below.

$$h(x) = -\sqrt{x} + 4$$

Answer:

x	Calculations	$f(x)$
0	$-\sqrt{0} + 4$	4
1	$-\sqrt{1} + 4$	3
2	$-\sqrt{2} + 4$	2.6
3	$-\sqrt{3} + 4$	2.3
4	$-\sqrt{4} + 4$	2
5	$-\sqrt{5} + 4$	1.8
6	$-\sqrt{6} + 4$	1.6