Evaluating Advanced Functions - Guided Lesson Explanation

Explanation#1

The first *h*-value in the table is 3. Evaluate $f(h) = |h - 6|$ for $h = 3$.

f(h) = |h − 6|

   = |3 − 6|

  = |−3|

  = 3

When $h = 3$, $f(h) = 3$. Complete the first row of the table.

f(h) = |h − 6|	
h	f(h)
3	3
7	?
2	?
4	?

Next, evaluate $f(h) = |h - 6|$ for $h = 7$.

f(h) = |h − 6|

   = |7 − 6|

  = |1|

  = 1

When $h = 7$, $f(h) = 1$. Complete the second row of the table.

f(h) = |h − 6|	
h	f(h)
3	3
7	1
2	?
4	?

Name _____   Date _____

Complete the rest of the table the same way.

f(h) = |h − 6|	
h	f(h)
3	3
7	1
2	4
4	2

Explanation#2

To evaluate expressions with square roots, first simplify the quantity under the square root and take the square root. Then perform any other operations.

Plug x = 190 into the function and simplify.

$f(x) = 4\sqrt{x} - 174$

$f(190) = 4\sqrt{190 - 174}$ Plug in x = 190

$f(190) = 4\sqrt{16}$ Subtract

$f(190) = 4(4)$ Take the square root

$f(190) = 16$ Multiply

Explanation#3

The first *x*-value in the table is 8. Evaluate $f(x) = x^2 + 15$ for $x = 8$.

$f(x) = x^2 + 15$

$\quad = (8)^2 + 15$ Plug in x = 8

$\quad = 64 + 15$ Square

$\quad = 79$ Add

When $x = 8$, $f(x) = 79$. Complete the first row of the table.

f(x) = x² + 15	
x	f(x)
8	79
5	?
6	?
0	?

Next, evaluate $f(x) = x^2 + 15$ for $x = 5$.

$f(x) = x^2 + 15$

$= (5)^2 + 15$ Plug in x = 5

$= 25 + 15$ Square

$= 40$ Add

When $x = 5$, $f(x) = 40$. Complete the second row of the table.

f(x) = x² + 15	
x	f(x)
8	79
5	40
6	?
0	?

Complete the rest of the table the same way.

f(x) = x² + 15	
x	f(x)
8	79
5	40
6	51
0	15