

Exercise 32

Tabular representations for the functions f , g , and h are given below. Write $g(x)$ and $h(x)$ as transformations of $f(x)$.

| | | | | | |
|--------|----|----|---|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| $f(x)$ | -1 | -3 | 4 | 2 | 1 |

| | | | | | |
|--------|----|----|----|---|---|
| x | -3 | -2 | -1 | 0 | 1 |
| $g(x)$ | -1 | -3 | 4 | 2 | 1 |

| | | | | | |
|--------|----|----|---|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| $h(x)$ | -2 | -4 | 3 | 1 | 0 |

Solution

$g(x)$ has the same outputs as $f(x)$ but with inputs off by 1.

$$g(x) = f(x + 1)$$

$h(x)$ has the same inputs as $f(x)$ but with outputs off by 1.

$$h(x) = f(x) - 1$$