

Check-in Quiz Section 1.2-1.3: Combining Transformations
 Complete the following questions **SHOWING ALL WORK** and steps where applicable.

1. Suppose that a function $y = f(x)$ contains the point $(12, -4)$. Find the coordinates of the **image point** after the following transformation. (2 marks)

$$y = \frac{1}{2}f(-2x-4) - 5 \rightarrow y = \frac{1}{2}f(-2(x+2)) - 5$$

$$(12, -4) \rightarrow -\frac{1}{2}x, \frac{1}{2}y \rightarrow (-6, -2) \rightarrow -\frac{1}{2}x - 2, \frac{1}{2}y - 5 \rightarrow \boxed{(-8, -7)}$$

2. Graph the following function and answer the questions below:

$$y = 2\sqrt{-(x-4)} - 3$$

right 2
 $(-4, -7)$

- a) Describe/list the transformations on the base function. (1 mark)

VE of 2
 reflect in y-axis
 4 right
 3 down

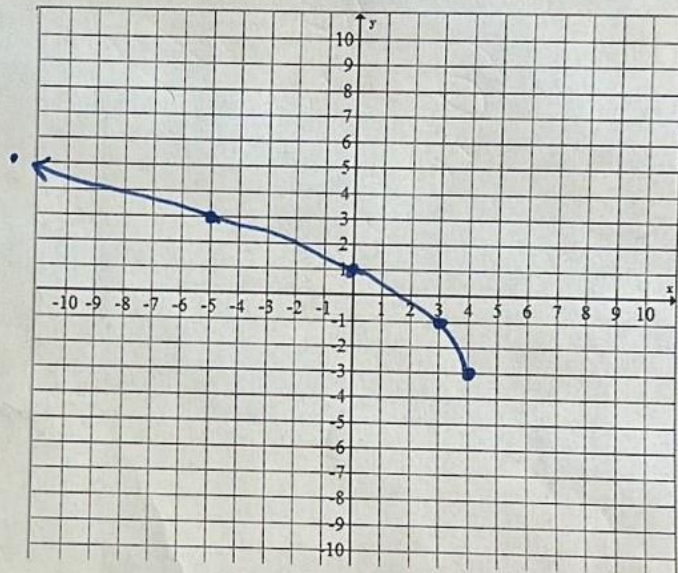
- b) Sketch the graph of the transformed function. Show mapping notation. (2 marks)

$y = \sqrt{x}$

x	y
0	0
1	1
4	2
9	3
16	4

$-x$	$2y$
0	0
-1	2
-4	4
-9	6
-16	8

$-x+4$	$2y-3$
4	-3
3	-1
0	1
-5	3
-12	5



- c) Determine the domain and range of the transformed function. (1 mark)

$\{x \mid x \leq 4, x \in \mathbb{R}\}, \{y \mid y \geq -3, y \in \mathbb{R}\}$