Activity 2.7
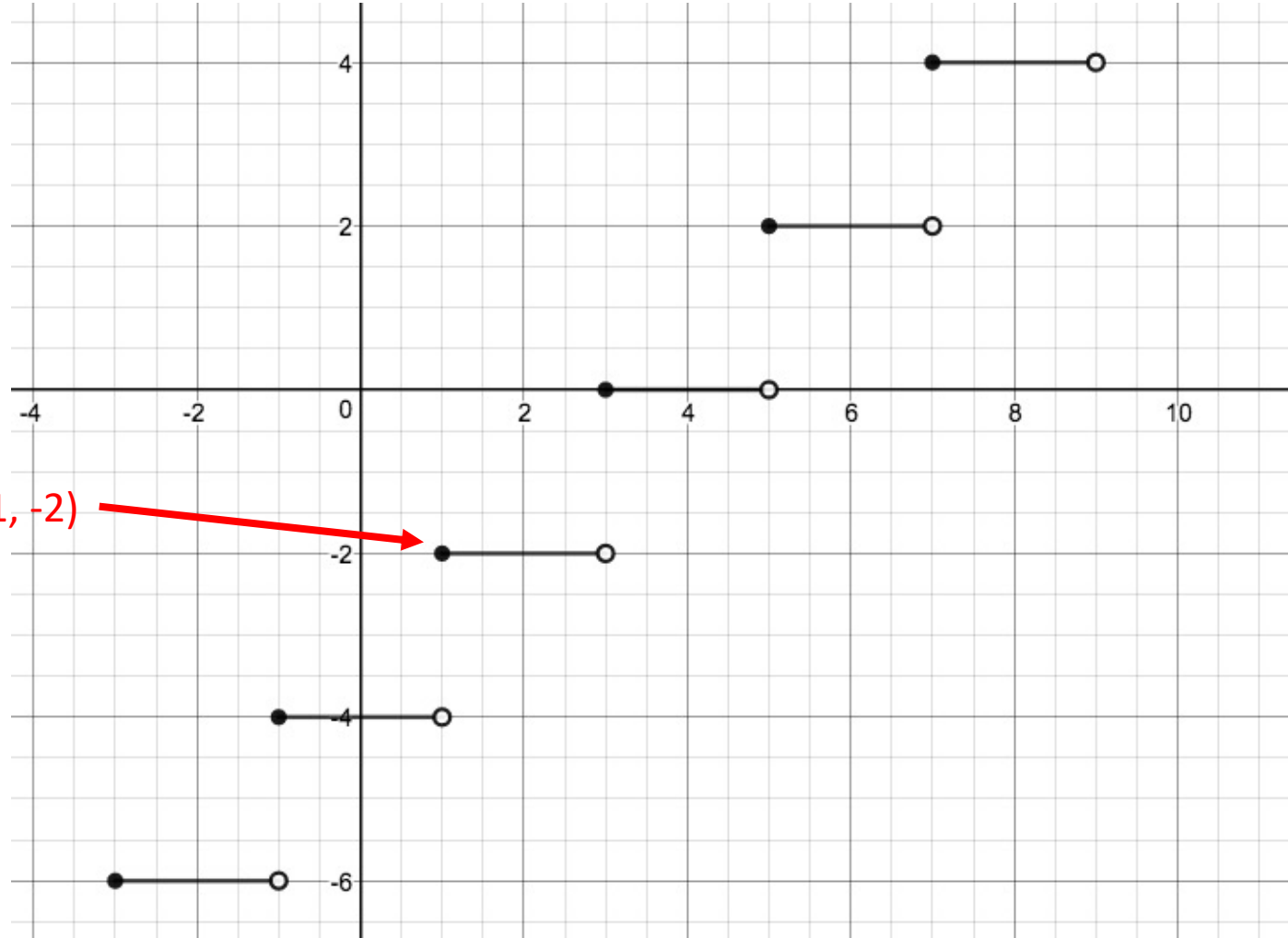
$$1. f(x) = 2\left[\frac{1}{2}(x-1)\right] - 2$$

Parameters	Geometric Transformation	Important additional Information
a = 2	Vertical stretch	
b = 1/2	Horizontal stretch	Length step = |1/b| = 1/0.5 = 2 ●—○
h = 1	Translation 1 right	
k = -2	Translation 2 down	
(h, k) (1, -2)	X	Starting point
$a \bullet b$ = +	X	Stairs are going up

$$1. f(x) = 2\left[\frac{1}{2}(x-1)\right] - 2$$

(h, k) (1, -2)
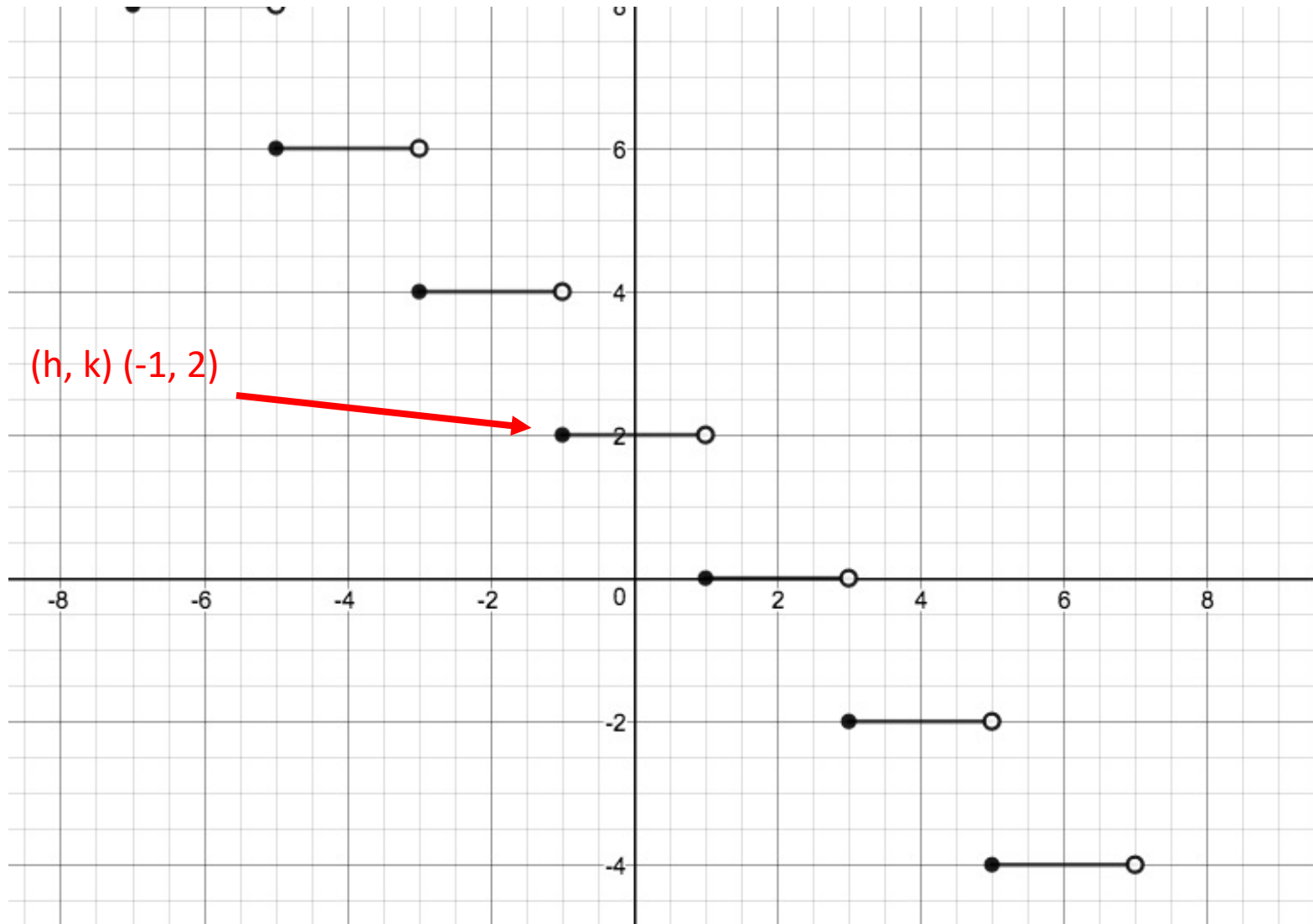
$$2. f(x) = -2\left[\frac{1}{2}(x+1)\right] + 2$$

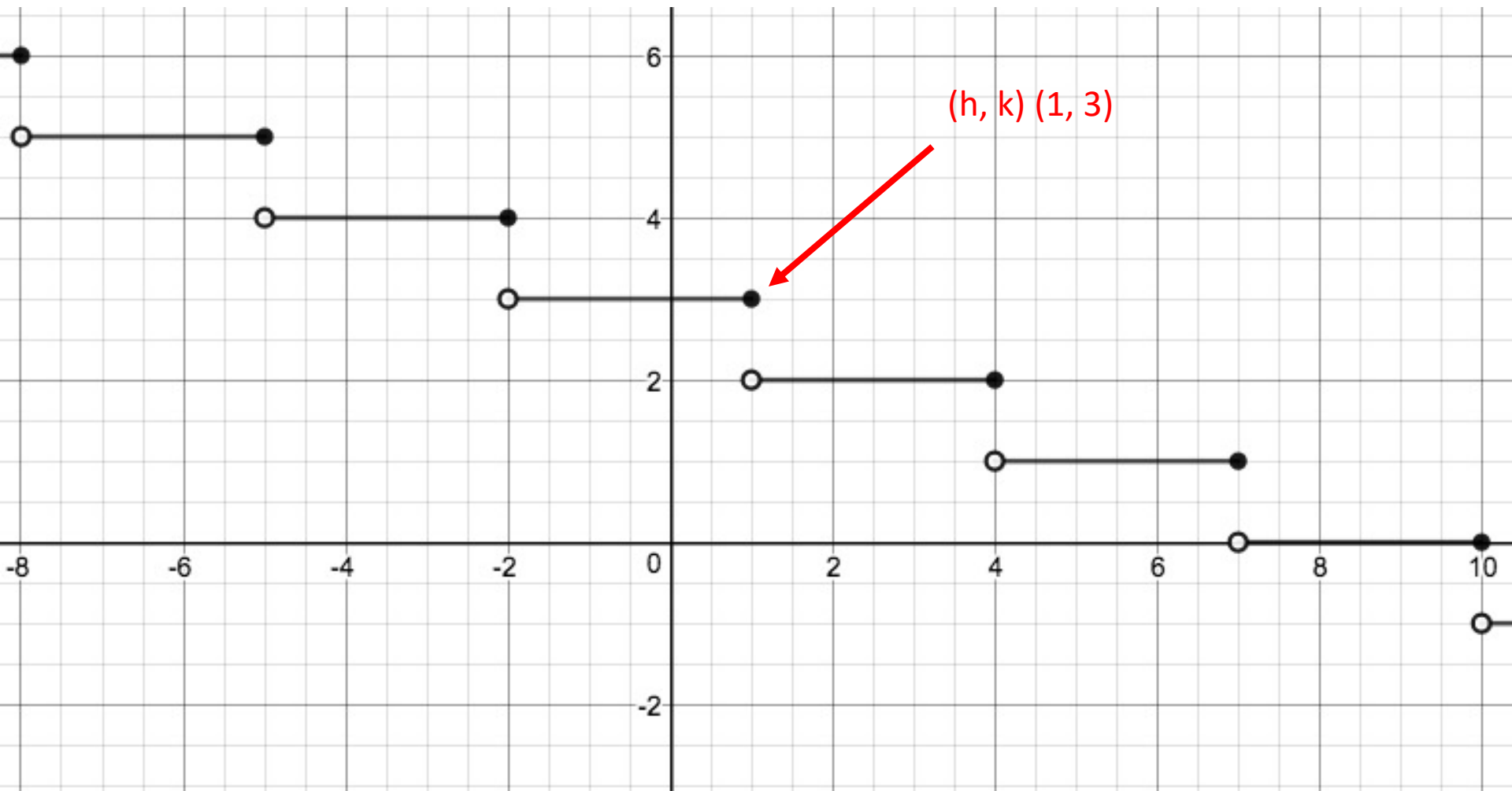| Parameters	Geometric Transformation	Important additional Information
a = -2	Vertical stretch Reflection off x axis	
b = 1/2	Horizontal stretch	Length step = $\|1/b\|$ = 1/0.5 = 2
h = -1	Translation 1 left	
k = 2	Translation 2 up	
(h, k) (-1, 2)	X	Starting point
$a \bullet b$ = -	X	Stairs are going down

$2. f(x) = -2\left[\dfrac{1}{2}(x+1)\right] + 2$

(h, k) (-1, 2)

$$3. f(x) = \left[-\frac{1}{3}(x-1) \right] + 3$$

Parameters	Geometric Transformation	Important additional Information
a = 1	basic	
b = -1/3	Horizontal stretch Reflection off y axis	Length step = |1/b| = 1/(1/3) = 3 ○――●
h = 1	Translation 1 right	
k = 3	Translation 3 up	
(h, k) (1, 3)	X	Starting point
$a \bullet b$ = -	X	Stairs are going down

3. $f(x) = \left[-\dfrac{1}{3}(x-1) \right] + 3$

(h, k) (1, 3)

$$4. f(x) = -2\left[-(x-2)\right] + 1$$

Parameters	Geometric Transformation	Important additional Information
a = -2	Vertical stretch Reflection off x axis	
b = -1	Reflection off y axis	Length step = |1/b| = 1
h = 2	Translation right	
k = 1	Translation 1 up	
(h, k) (2, 1)	X	Starting point
$a \bullet b$ = +	X	Stairs are going up

$4. f(x) = -2\left[-(x-2)\right] + 1$

(h, k) (2, 1)
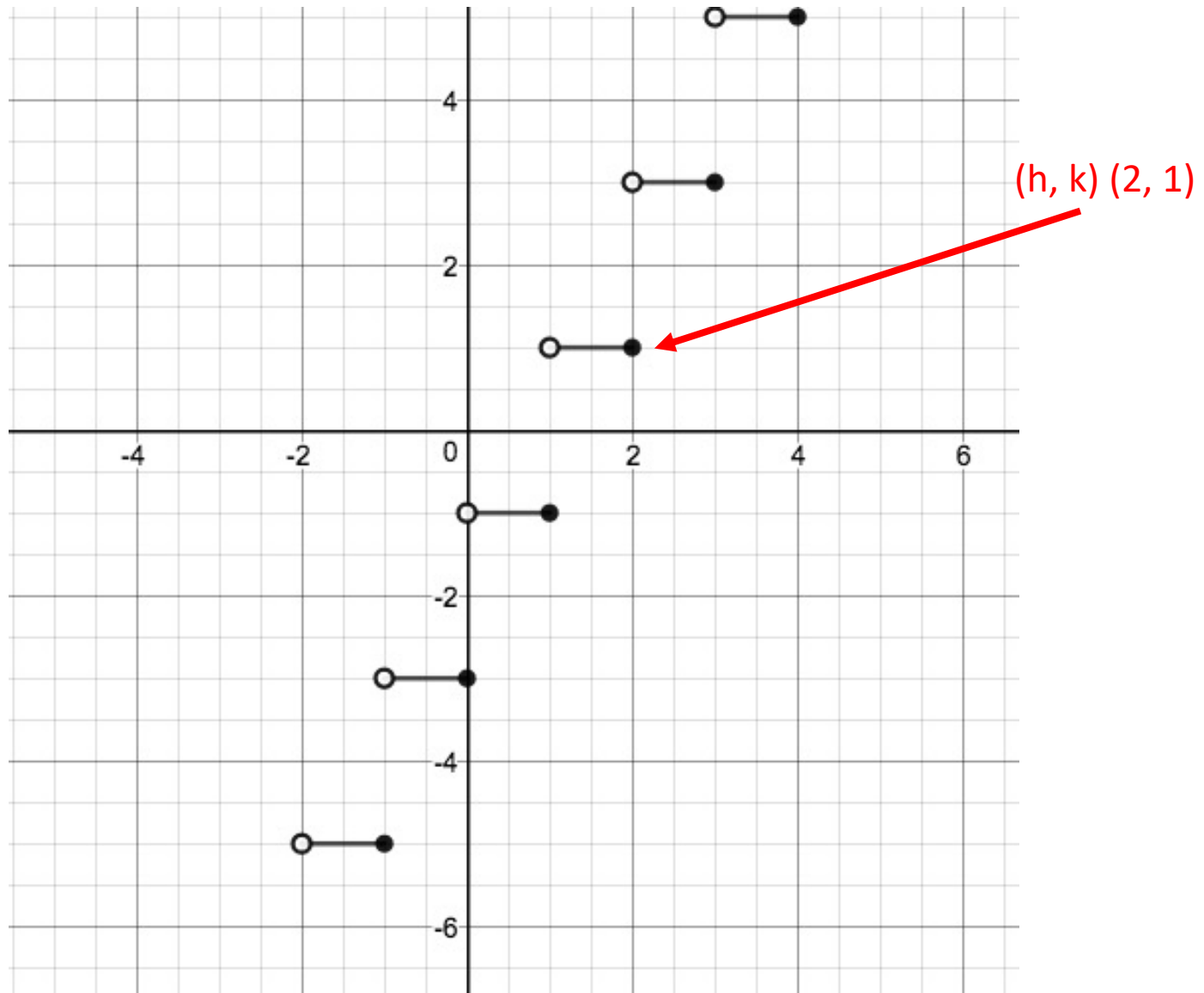
$$5. f(x) = 2\left[-3(x-1)\right] + 4$$

Parameters	Geometric Transformation	Important additional Information
a = 2	Vertical stretch	
b = -3	Horizontal shrink Reflection off y axis	Length step = |1/b| = |1/3| = 1/3 ○━━●
h = 1	Translation 1 right	
k = 4	Translation 4 up	
(h, k) (1, 4)	X	Starting point
$a \bullet b$ = -	X	Stairs are going down

$5. f(x) = 2\left[-3(x-1)\right] + 4$

(h, k) (1, 4)
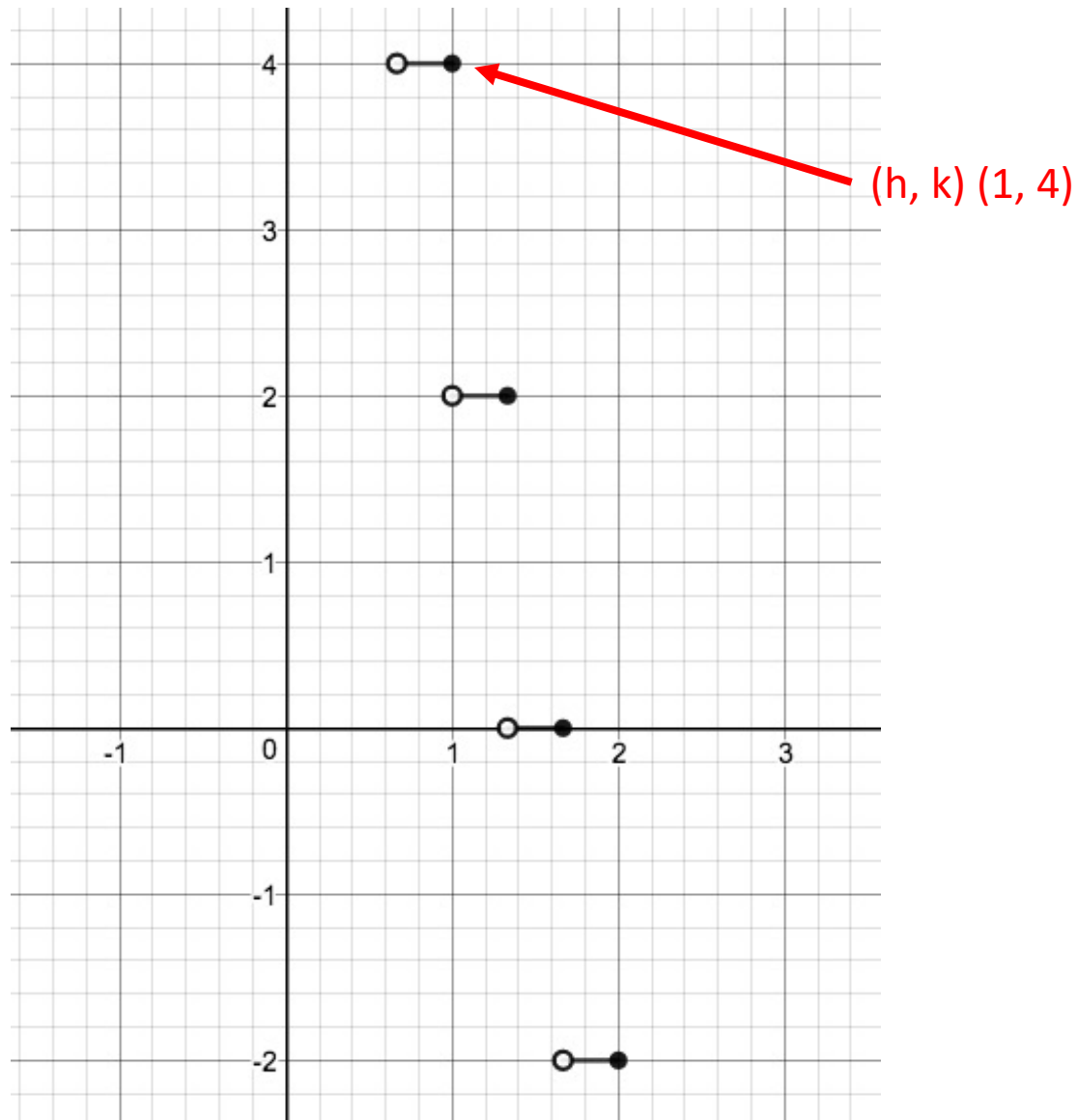
$$6. f(x) = 1.5\big[2(x-0.5)\big]+1$$

Parameters	Geometric Transformation	Important additional Information
a = 1.5	Vertical stretch	
b = 2	Horizontal shrink	Length step = |1/b| = |1/3| = 1/2
h = 0.5	Translation 0.5 right	
k = 1	Translation 1 up	
(h, k) (0.5, 1)	X	Starting point
$a \bullet b$ = +	X	Stairs are going up

$$6.\, f(x) = 1.5 \left[2(x - 0.5) \right] + 1$$

(h, k) (0.5, 1)
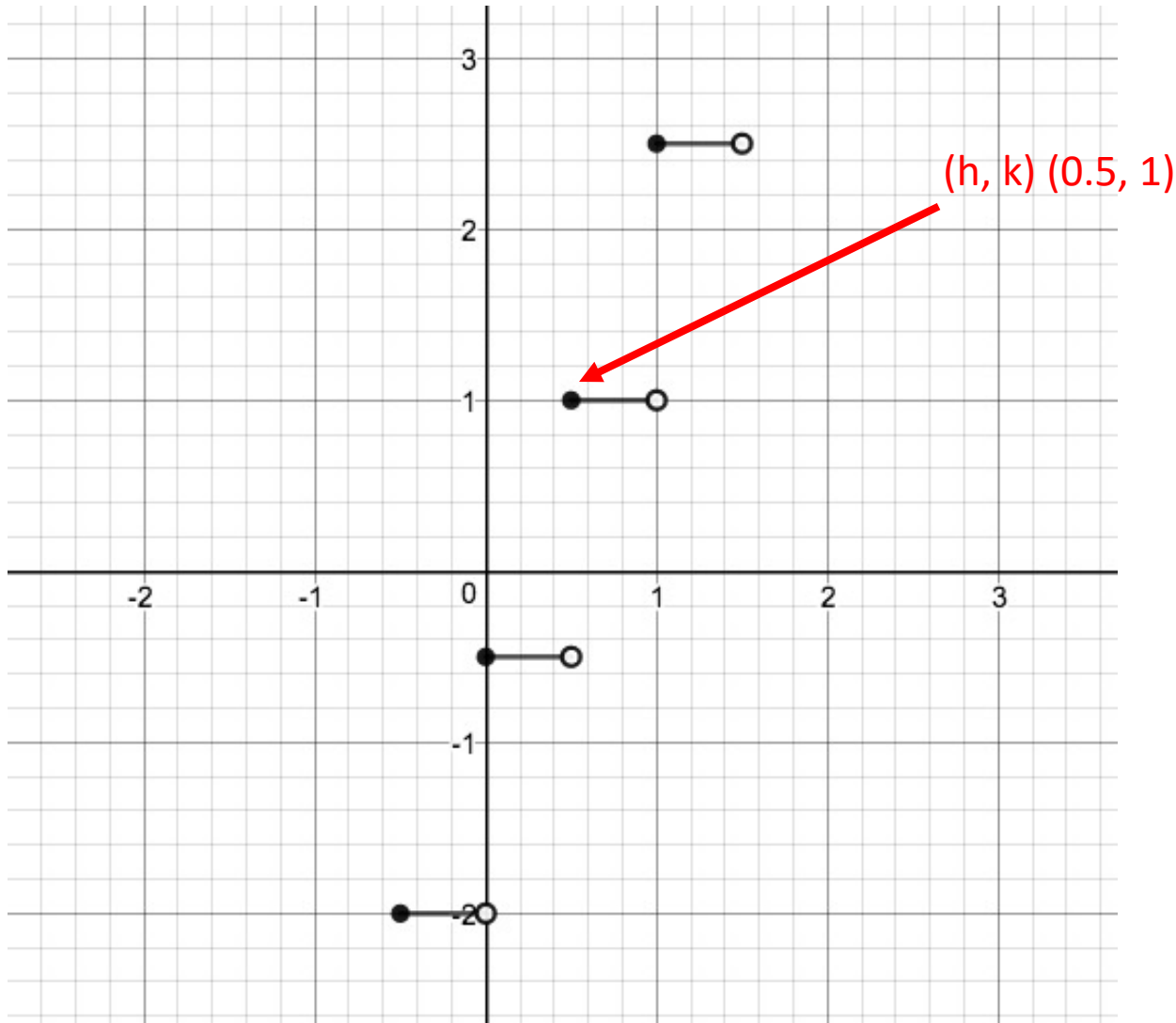
$$7. f(x) = 10\left[-0.1(x-20)\right] - 5$$

Parameters	Geometric Transformation	Important additional Information
a = 10	Vertical stretch	
b = -0.1	Horizontal stretch Reflection off y axis	Length step = |1/b| = |1/0.1| = 10 ○———●
h = 20	Translation 20 right	
k = -5	Translation 5 down	
(h, k) (20, -5)	X	Starting point
$a \bullet b$ = -	X	Stairs are going down

$$7. f(x) = 10[-0.1(x-20)] - 5$$
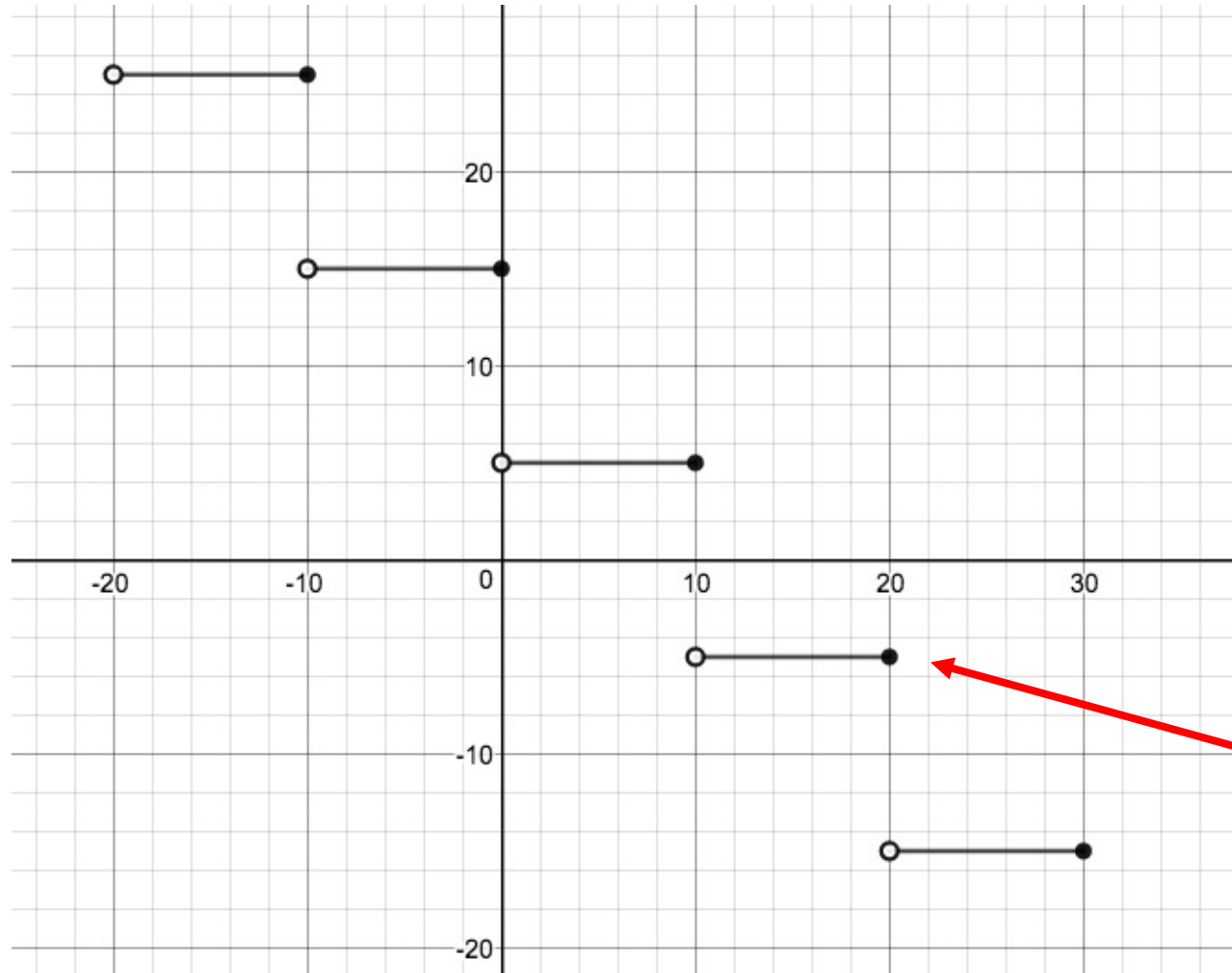
(h, k) (20, -5)

$$8. f(x) = -\left[-4(x+0.5)\right]+2$$

Parameters	Geometric Transformation	Important additional Information
a = -1	Reflection off x axis	
b = -4	Horizontal shrink Reflection off y axis	Length step = |1/b| = |1/4| = 0.25
h = -0.5	Translation 0.5 left	
k = 2	Translation 2 up	
(h, k) (-0.5, 2)	X	Starting point
$a \bullet b$ = +	X	Stairs are going up

$$8. f(x) = -\left[-4(x + 0.5)\right] + 2$$

(h, k) (-0.5, 2)
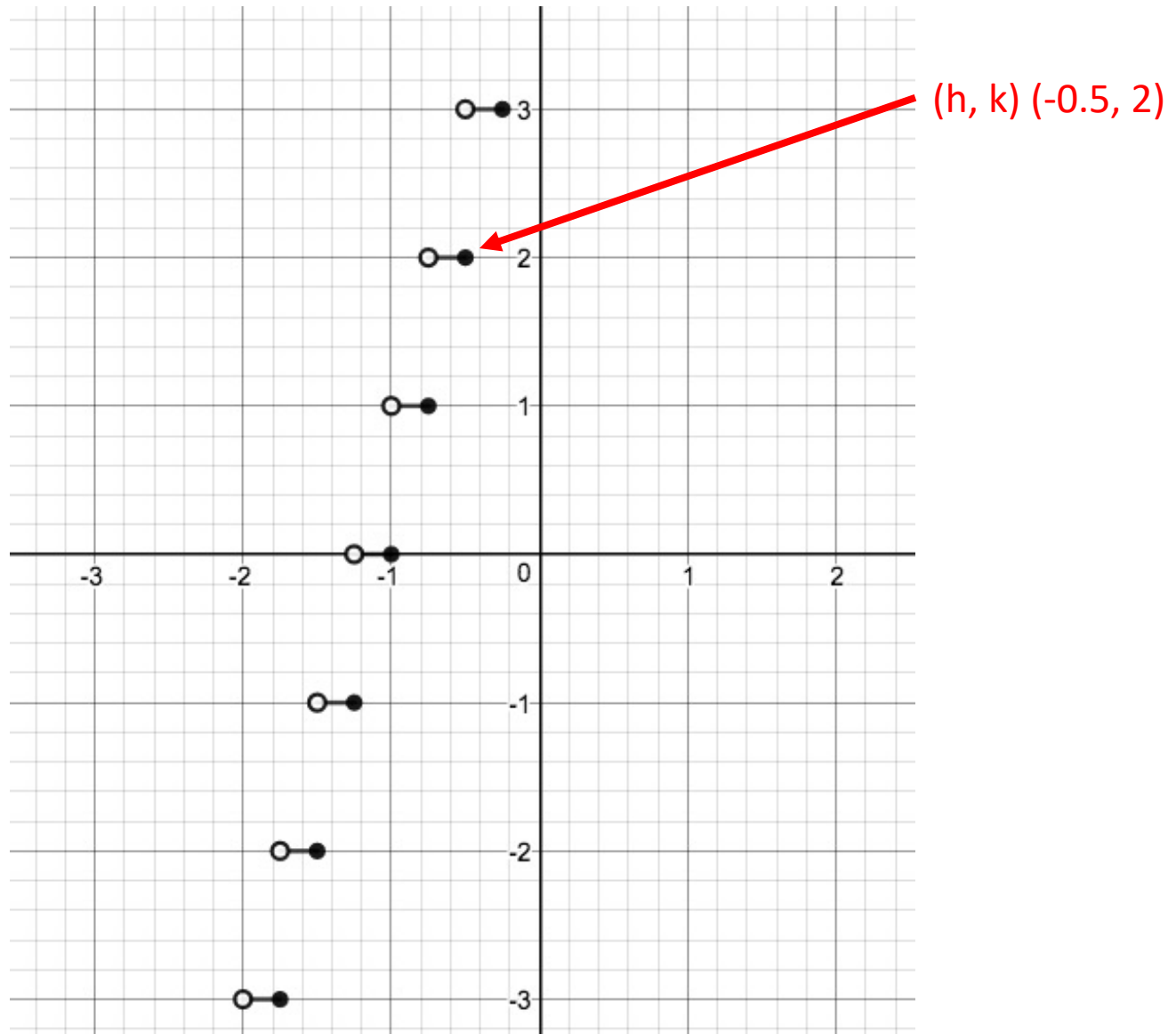
- I feel you are ready for LC 2.7
- Meanwhile, never hesitate to contact me.
- Remember, Checklist week 6