SM2H 1.4 answers 2019-2020
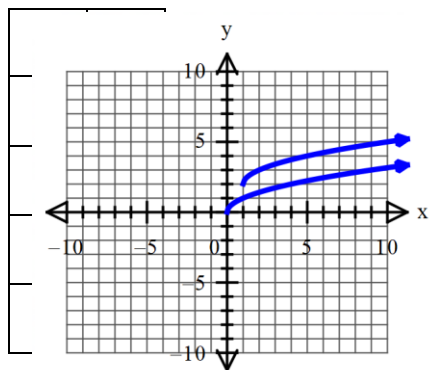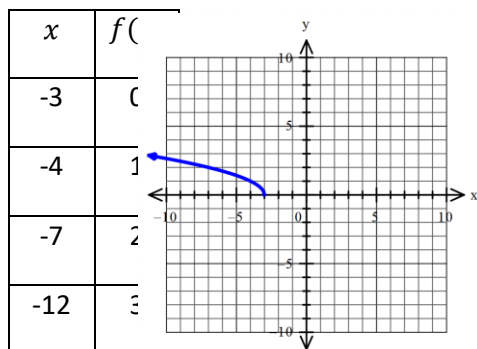
1. a=3, b=5, h=6, k=8

2. a=1, b=1, h=-4, k=-2

3. a=-2 or 2, b=1, h=0, k=7

4. a=1, b=1, h=0, k=0

5. a=1 or -1, b=1 or -1, h=-2, k=0

6. a=12, b=3 or -3, h=0, k=-6

7. vertical stretch by 3

   horizontal shrink by $\frac{1}{5}$

   right 6

   up 8

8. reflection over x-axis

   left 2

   up 5

9. left 4

10. reflection over the y-axis

    horizontal shrink by $\frac{1}{10}$

11. reflection over the y-axis

    vertical shrink by $\frac{1}{2}$

12. reflection over the x-axis

    horizontal stretch by 3

    left 2

    down 9

13. Transformations: translate right 1, up 2
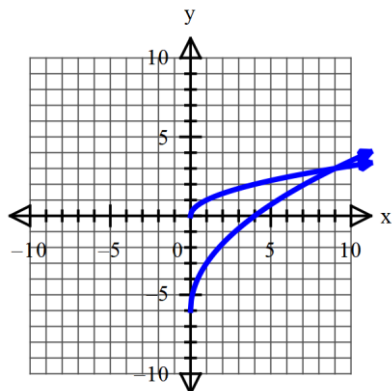
    Endpoint: $(1, 2)$

14. Transformations: reflect over y-axis, translate left 3

    Endpoint: $(-3, 0)$

x	$f($
-3	0
-4	1
-7	2
-12	3

15. Transformations: vertical stretch of 3, translate down 6

Endpoint: $(0, -6)$

x	$f(x)$
0	-6
1	-3
4	0
9	3

16. Transformations: reflect over x-axis, vertical stretch of 2, translate up 4
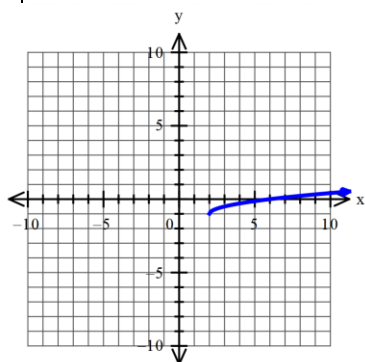
Endpoint: $(0, 4)$

x	y
0	4
1	2
4	0
9	-2

17. Transformations: vertical shrink of $\frac{1}{2}$, translate right 2, down 1

Endpoint: $(2, -1)$

x	$f(x)$
2	-1
3	$-\frac{1}{2}$
6	0
11	$\frac{1}{2}$

18. #13 Domain: $[1, \infty)$ Range: $[2, \infty)$

    #14 Domain: $(-\infty, -3]$ Range: $[0, \infty)$

    #15 Domain: $[0, \infty)$ Range: $[-6, \infty)$

    #16 Domain: $[0, \infty)$ Range: $(-\infty, 4]$

    #17 Domain: $[2, \infty)$ Range: $[-1, \infty)$

19. Any answer they put is ok; since this is the first day it does not need to be specific. By the third day it should be accurate.

Here are possible solutions:

- h and k moves the endpoint
- a makes the graph flip over
- a makes the graph shorter or fatter
- a makes the graph bigger or smaller
- h moves endpoint right or left
- k moves endpoint up or down

20. graphs can look different

21. graphs can look different

22. Domain: $[-4, 4) \cup (4, \infty)$ Range: $(-\infty, 6)$

23. picture

24. A. $y = \sqrt{x} + 1$

    B. $y = \sqrt{x - 3}$

    C. $y = \sqrt{x + 4} - 2$

    D. $y = \sqrt{x - 2} + 7$

25. $y = x + 5$

$y = -x$

$y = 4x + 3$

$y = \dfrac{1}{2}x + 8$