SM2H Name:_____ Period:_____

1.4 Transformations – Square Root Functions HW 2019-20

Answer the following questions using the equation. $y = a\sqrt{b(x-h)} + k$.
Given the following equations find a, b, h, and k.

1. $y = 3\sqrt{5(x-6)} + 8$

a=_____

b=_____

h=_____

k=_____

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

a=_____

b=_____

h=_____

k=_____

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

a=_____

b=_____

h=_____

k=_____

4. $y = \sqrt{x}$

a=_____

b=_____

h=_____

k=_____

5. $y = -\sqrt{-(x+2)}$

a=_____

b=_____

h=_____

k=_____

6. $y = 12\sqrt{-3x} - 6$

a=_____

b=_____

h=_____

k=_____

For each of the following list the transformations in the correct order.

7. $y = 3\sqrt{5(x-6)} + 8$

8. $y = -\sqrt{(x+2)} + 5$

9. $y = \sqrt{x+4}$

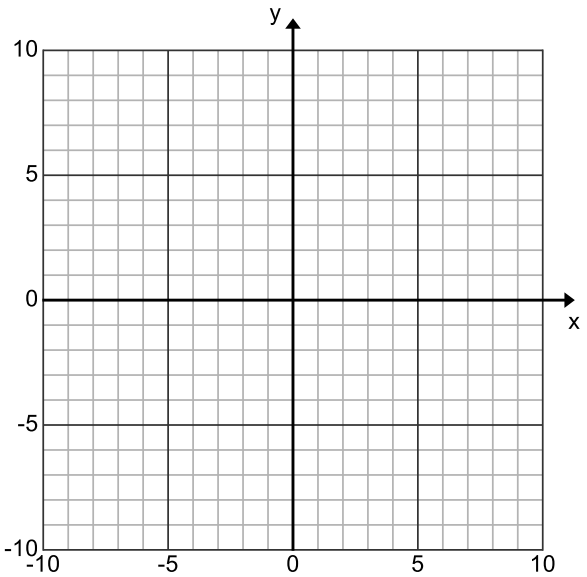
10. $y = \sqrt{-10x}$

11. $y = \frac{1}{2}\sqrt{-x}$

12. $y = -\sqrt{\frac{1}{3}(x+2)} - 9$

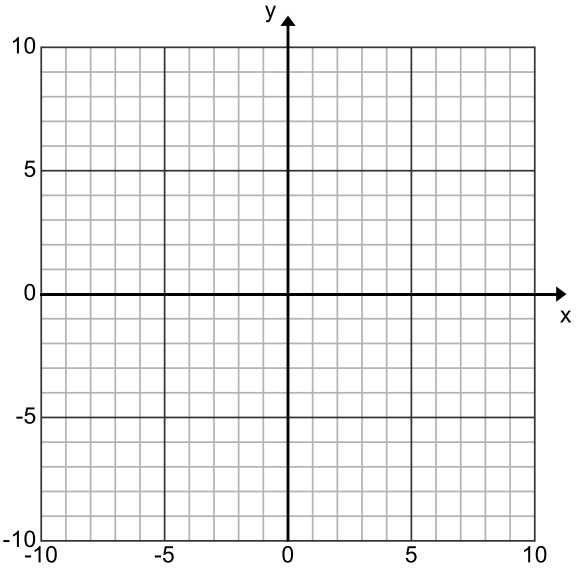
For each of the following: 1) List the transformations in the correct order. 2) Create a table to show the transformations on the key points. 3) State the endpoint. 4) Sketch the graph.

13. $y = \sqrt{(x-1)} + 2$



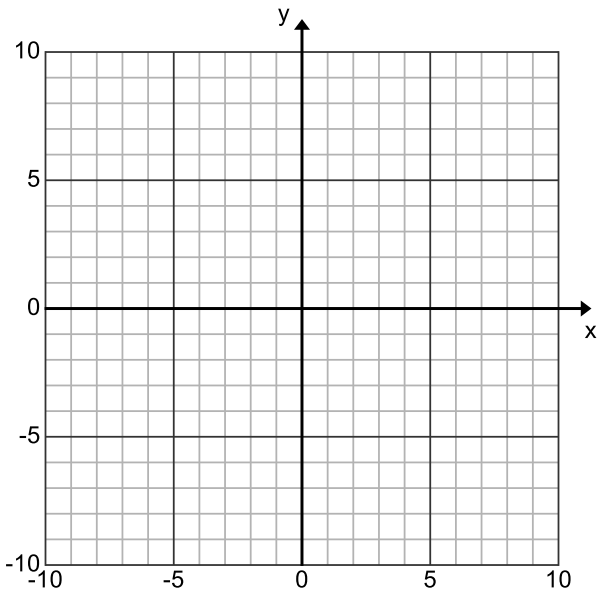
Endpoint:

14. $f(x) = \sqrt{-(x+3)}$



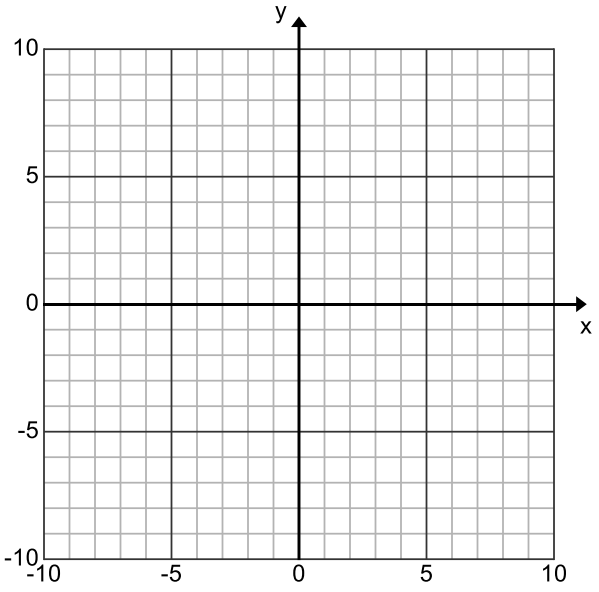
Endpoint:

15. $g(x)=3\sqrt{x}-6$



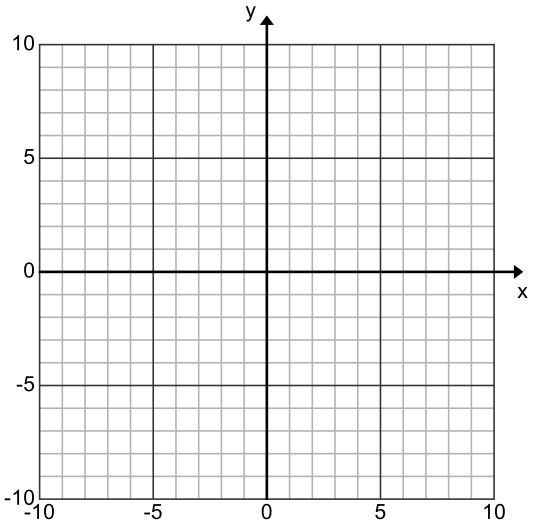
Endpoint:

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



Endpoint:

17. $f(x)=\frac{1}{2}\sqrt{(x-2)}-1$



Endpoint:

18. **State the domain and range for each graph questions 13-17.**

#13 domain_____
range_____

#14 domain_____
range_____

#15 domain_____
range_____

#16 domain_____
range_____

#17 domain_____
range_____

19. Make a conjecture about functions that come in the form: $f(x)=a\sqrt{b(x-h)}+k$.

Explain the effect of *a, b, h* and *k* on the graph of a square root function.

a_____

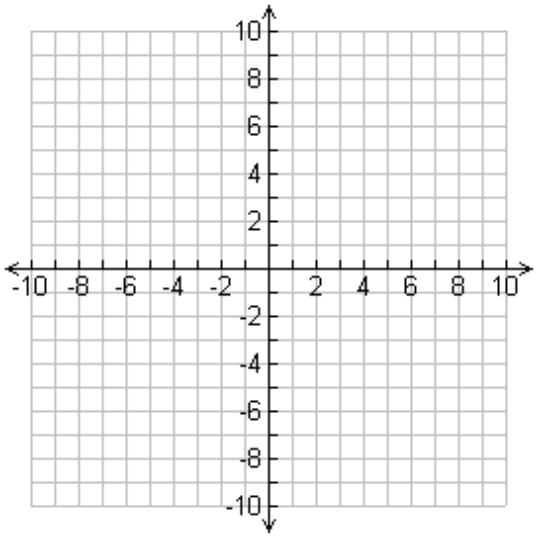
b_____

h_____

k_____

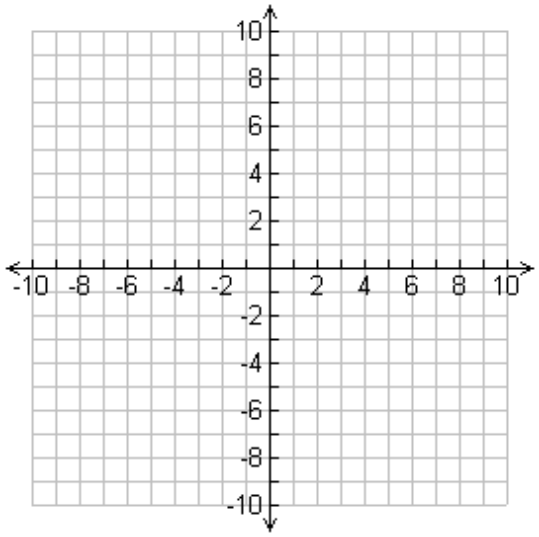
20: Sketch a graph with the following characteristics.

Domain: $(-\infty, 5]$
Range: $(-\infty, -2]$

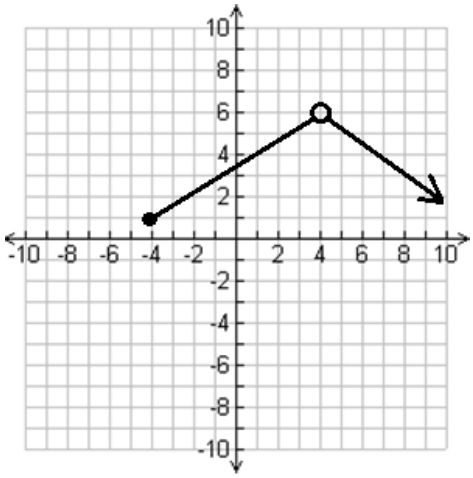


21: Sketch a graph with the following characteristics.

Domain: $(-7, 9)$
Range: $(-2, 4)$



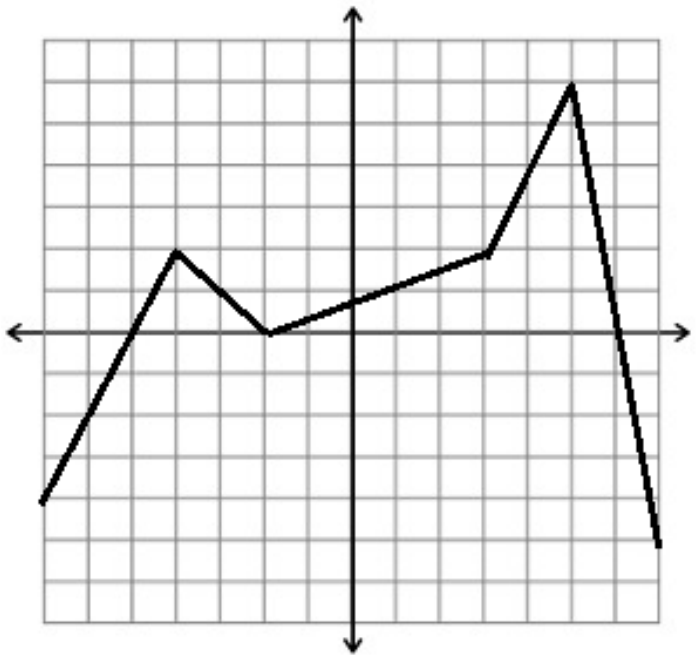
22:



Domain:

Range:

23. Increasing or Decreasing?



Add + or – signs to the graph.

If part of the graph is increasing, add a + sign.

If part of the graph is decreasing, add a – sign.

24: Write an equation for each translation of the **parent function y** = $\sqrt{x}$. Start with the parent function for each question.

A: 1 unit up: _____ B: 3 units to the right: _____

C: 4 units left, 2 units down: _____

D: 2 units right, 7 units up: _____

25: Write an equation for each transformation of the linear function $y = x$.

A: 5 units up: _____ B: Reflect over the x axis: _____

C: Vertical Stretch of 4 and 3 units up: _____

D: Vertical Shrink of $\frac{1}{2}$ and 8 units up: _____