10-1 to 10-4 Review

mine

Find the domain and range for each square root function. State the *x*- and *y*-intercepts, if they exist.

1. $f(x) = \sqrt{x-4}$

Domain: $[4, \infty)$

Range: $[0, \infty)$

x-intercept: $(4, 0)$

y-intercept: none (Does not exist)

2. $g(x) = \sqrt{x+9} - 4$

Domain: $[-9, \infty)$

Range: $[-4, \infty)$

x-intercept: $(7, 0)$

y-intercept: $(0, -1)$

3. $h(x) = \sqrt{x-5} + 3$

Domain: $[5, \infty)$

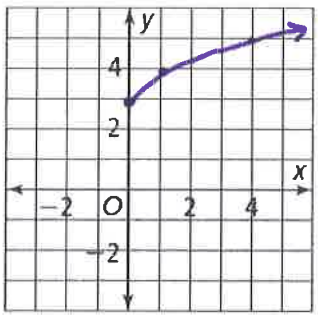
Range: $[3, \infty)$

x-intercept: none

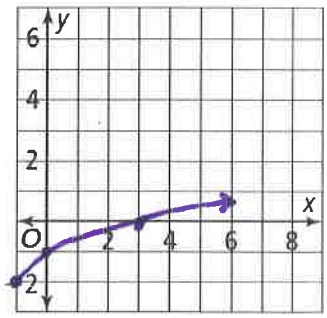
y-intercept: none

Graph each function by translating $f(x) = \sqrt{x}$.

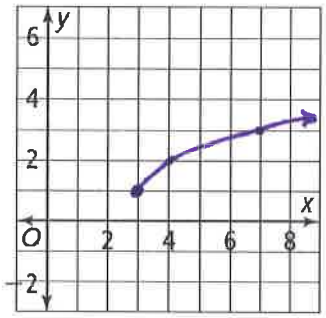
4. $g(x) = \sqrt{x} + 3$



5. $h(x) = \sqrt{x+1} - 2$



6. $k(x) = \sqrt{x-3} + 1$



For each function, identify the domain, range, and intercepts.

7. $g(x) = \sqrt[3]{x} - 1$

domain: $(-\infty, \infty)$

range: $(-\infty, \infty)$

x-int: $(1, 0)$

y-int: $(0, -1)$

8. $h(x) = \sqrt[3]{x+8} - 3$

domain: $(-\infty, \infty)$

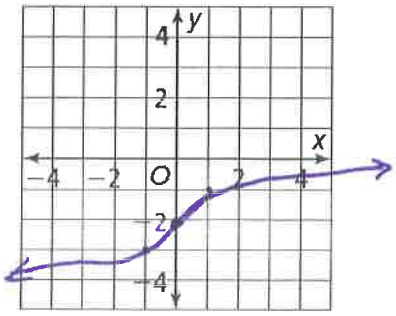
range: $(-\infty, \infty)$

x-int: $(19, 0)$

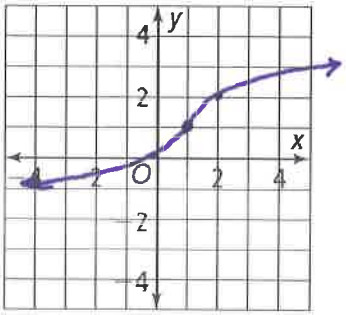
y-int: $(0, -1)$

Graph each function by translating $f(x) = \sqrt[3]{x}$.

9. $g(x) = \sqrt[3]{x} - 2$



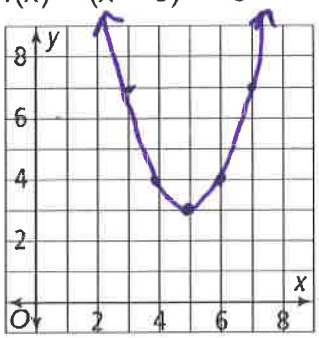
10. $k(x) = \sqrt[3]{x-1} + 2$



Mine

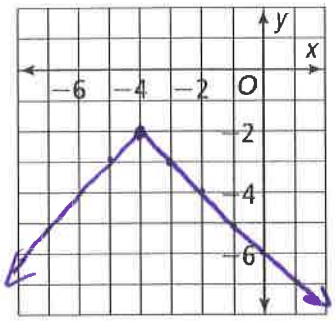
Graph each function. State its domain and range. Determine the minimum and maximum values and the equation of the axis of symmetry, if it exists.

11. $f(x) = (x - 5)^2 + 3$



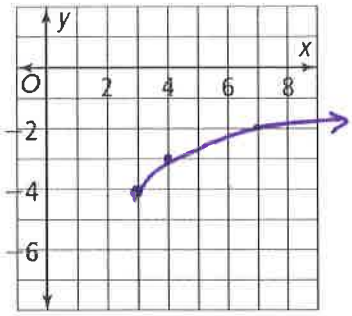
domain: $(-\infty, \infty)$
range: $[3, \infty)$
min: 3
no max
axis of sym: $x = 5$

12. $g(x) = -|x + 4| - 2$



domain: $(-\infty, \infty)$
range: $(-\infty, -2]$
no min
max: -2
axis of sym: $x = -4$

13. $h(x) = \sqrt{x - 3} - 4$



domain: $[3, \infty)$
range: $[-4, \infty)$
min: -4
no max
no axis of sym

Describe the effect of each translation of *f* for the given function.

14. $g(x) = f(x) + 8$

translated up 8

15. $h(x) = f(x - 11)$

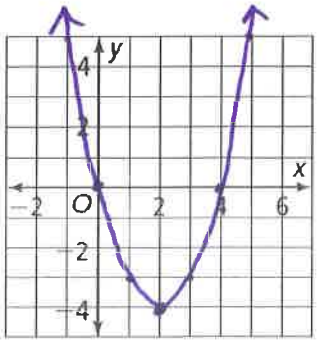
translated right 11

16. $j(x) = f(x + 7) - 4$

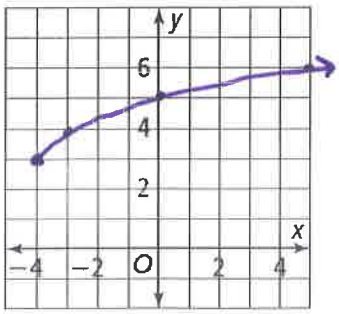
translated left 7 down 4

Sketch the graph each function.

17. $f(x) = (x - 2)^2 - 4$



18. $g(x) = \sqrt{x + 4} + 3$



19. $h(x) = 2^x + 4$