Bellwork

Graph $y = \sqrt{x+2}$

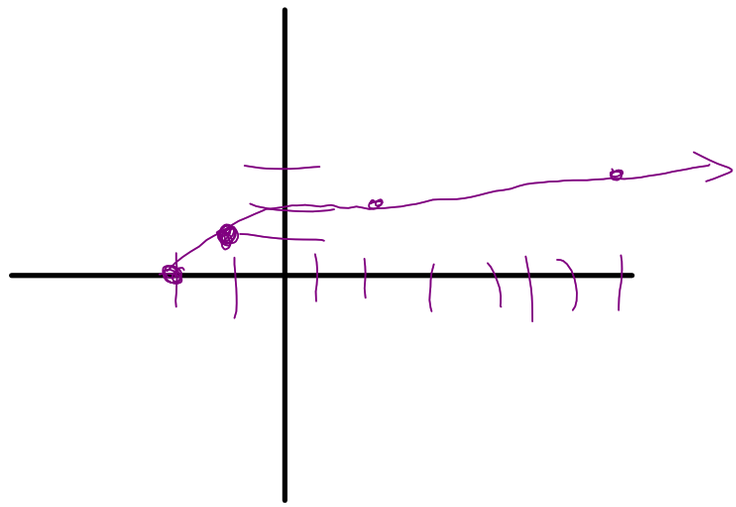
x	-2	-1	2	7
y	0	1	2	3

$x+2=0$ $\quad x=-2$ $\quad \sqrt{0}=0$

$x+2=1$ $\quad \sqrt{1}=1$

$x+2=4$ $\quad x=2$ $\quad \sqrt{4}=2$

$x+2=9$ $\quad x=7$ $\quad \sqrt{9}=3$



Rewrite each function to make it easy to graph using transformations of its parent function. Describe the graph.

1) $y = \sqrt{9x - 27}$

$y = \sqrt{9(x-3)}$

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

right 3 units

$\sqrt{9x-27}$ $+3$ ↓ up 3

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

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

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

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

left 4 units

$x + 4 = 0$

$-4 \quad -4$

$x = -4$

3) $y = \sqrt[3]{64x+128}$

$y = \sqrt[3]{64(x+2)}$

$y = 4\sqrt[3]{x+2}$

left 2 units

(4) $y = \sqrt[3]{8x-24} + 1$

$y = \sqrt[3]{8(x-3)} + 1$

$y = 2\sqrt[3]{x-3} + 1$

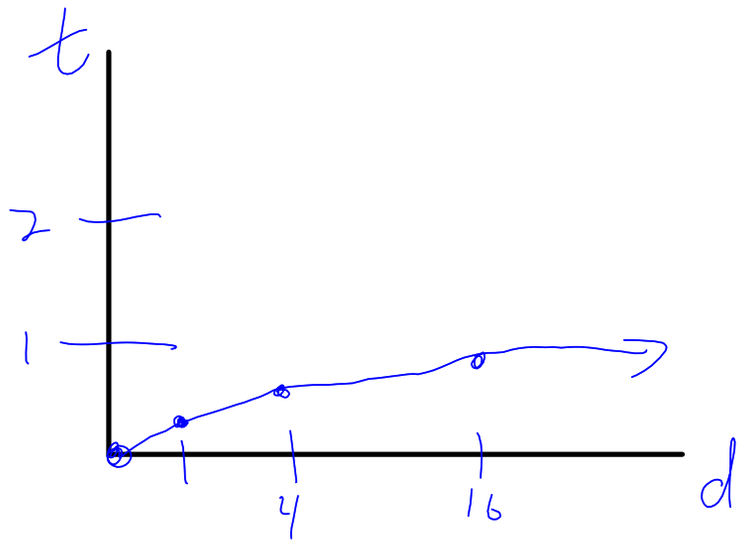
up 1 unit

right 3 units

16. You can use the equation $t = \frac{1}{4}\sqrt{d}$ to find the time t, in seconds, it takes an object to fall d feet after being dropped.

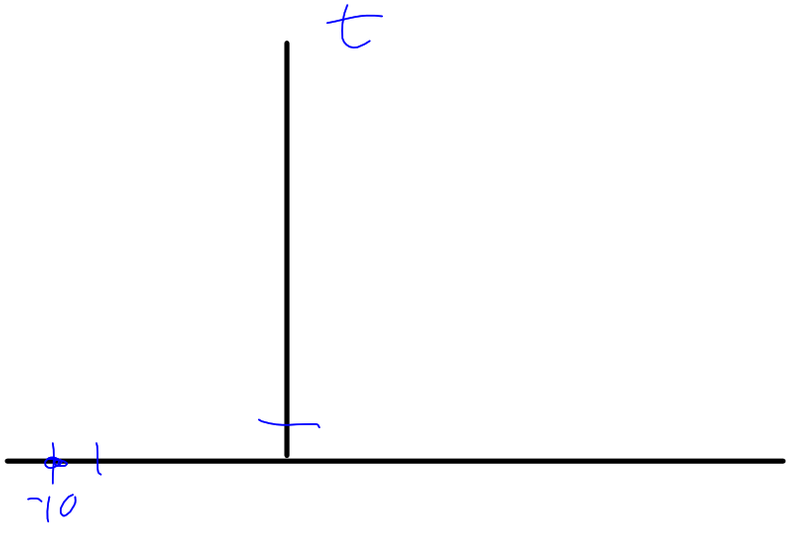
a. Graph the equation.

d	t
0	0
1	1/4
4	1/2
16	1
36	1.5



17. An exercise specialist has studied your exercise routine and says the formula $t = 1.85\sqrt{c+10}$ expresses the amount of time t, in minutes, it takes you to burn c calories (cal) while exercising.

a. Graph the equation.



c	t
-10	0
-9	1.85
-6	3.7
-1	5.55
6	7.4
15	9.25
26	11.1
39	12.95
54	14.8

$c+10=0$ $c=-10$

$c+10=1$ $c=-9$

$c+10=4$ $c=-6$