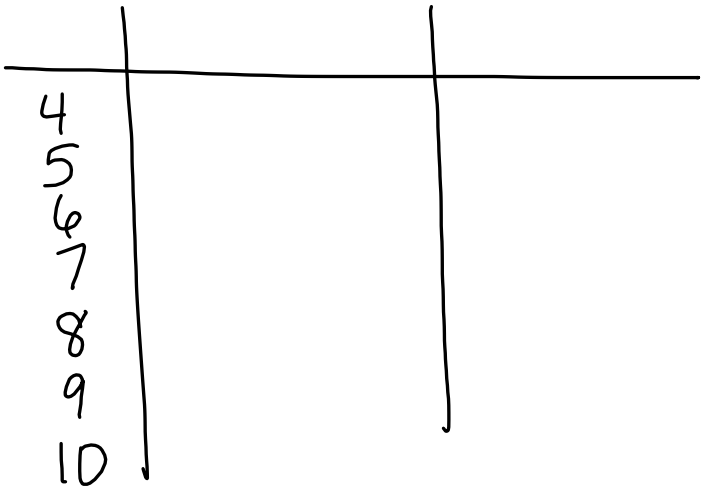
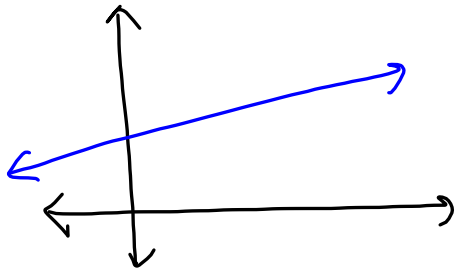

4
5
6
7
8
9
10

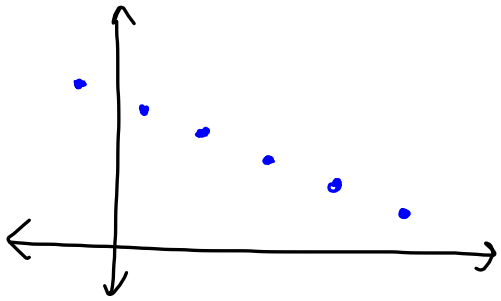
Sec. 4.4 Graphing a Function Rule

Vocabulary

- continuous graph: a graph that is unbroken

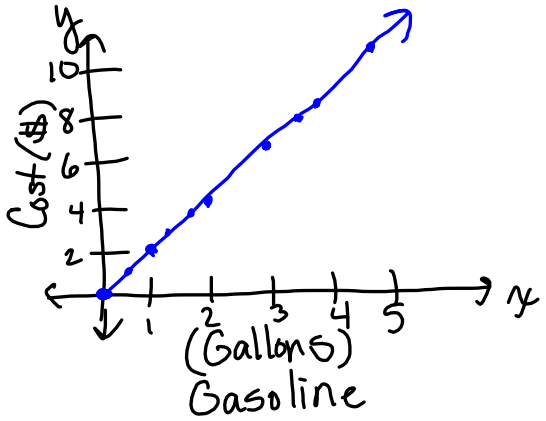


- discrete graph: a graph composed of distinct, isolated points

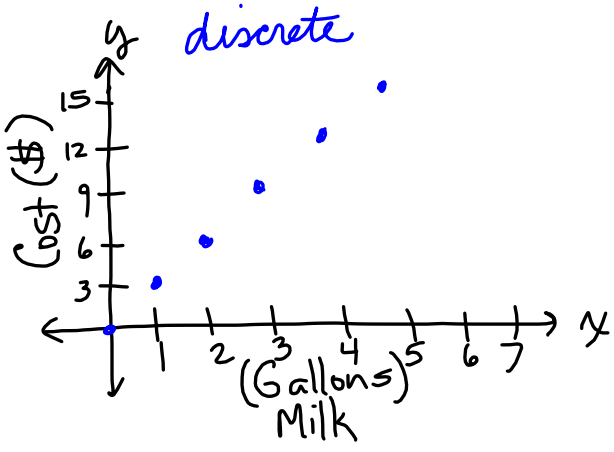


Ex:

gallons of gasoline
$2



gallons of milk
$3
discrete

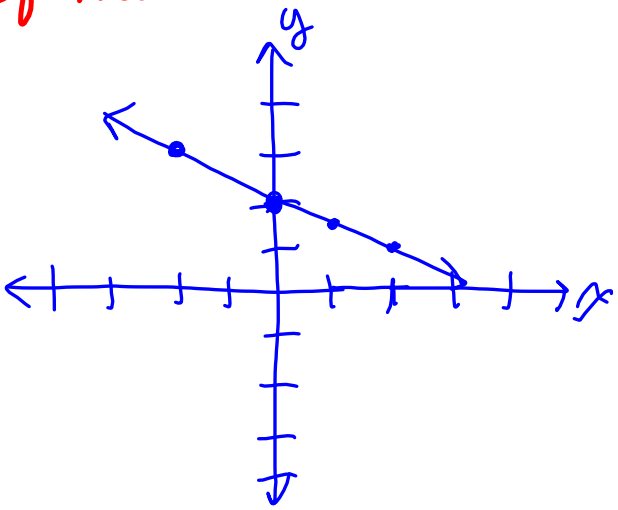


Problem 1:

a. Graph the function rule $y = -\frac{1}{2}x + 2$.

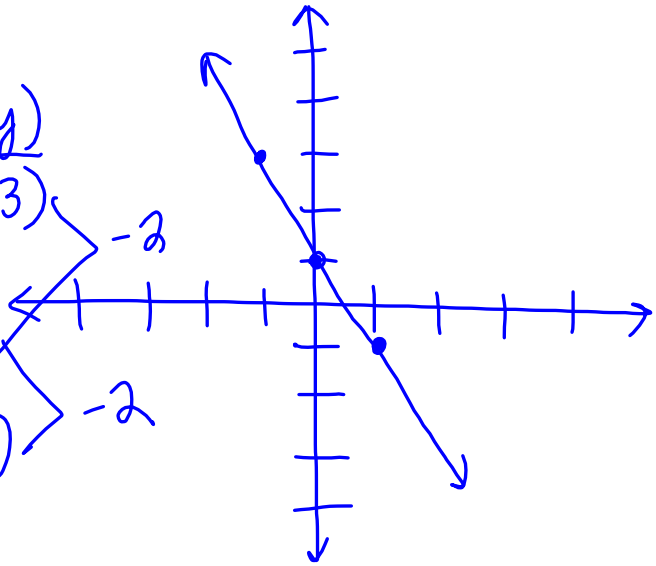
* Construct a table of values.

x	$y = -\frac{1}{2}x + 2$	(x, y)
0	$y = -\frac{1}{2}(0) + 2 = 2$ $0 + 2$	$(0, 2)$
1	$y = -\frac{1}{2}(1) + 2$ $-\frac{1}{2} + 2 \cdot \frac{2}{2}$ $-\frac{1}{2} + \frac{4}{2} = \frac{3}{2}$	$(1, 1.5)$
2	$y = -\frac{1}{2}(2) + 2$ $y = -1 + 2 = 1$	$(2, 1)$
-2	$y = -\frac{1}{2}(-2) + 2$ $1 + 2$ 3	$(-2, 3)$



b. $y = -2x + 1$

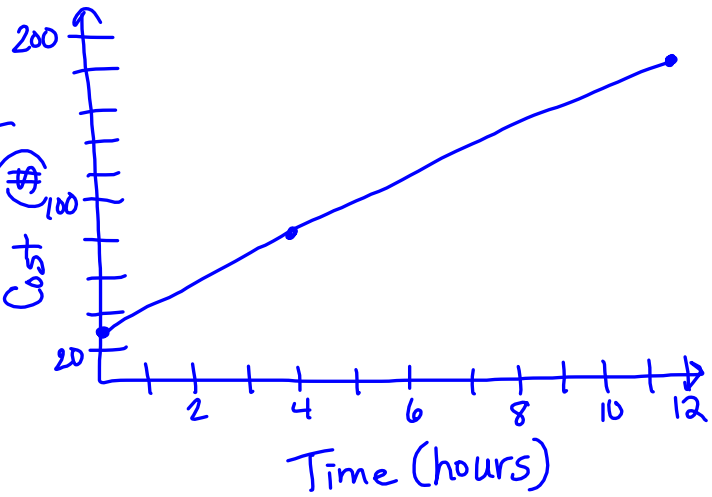
x	$-2x + 1$	(x, y)
-1	$-2(-1) + 1$ $2 + 1$	$(-1, 3)$
0	$-2(0) + 1$ $0 + 1$	$(0, 1)$
1	$-2(1) + 1$ $-2 + 1$	$(1, -1)$



Problem 2:

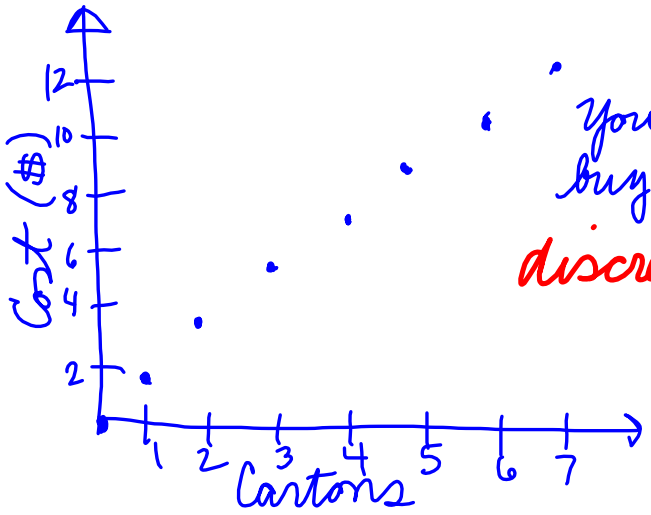
The function $C = 12.5h + 30$ represents the total cost of renting a truck for h hours. What is a reasonable graph of the function given that the daily limit is 12 hours?

h	$12.5h+30$	(h, C)
0	$12.5(0)+30$	$(0, 30)$
12	$12.5(12)+30$ $150+30$	$(12, 180)$
4	$12.5(4)+30$ $50+30$	$(4, 80)$



Problem 3: Megan buys eggs for $1.75 per carton. The cost is a function of the number of cartons bought. What is the graph of the function? Is the function continuous or discrete?

cart.	Cost
1	1.75
2	3.50
3	5.25
4	7.00
5	8.75



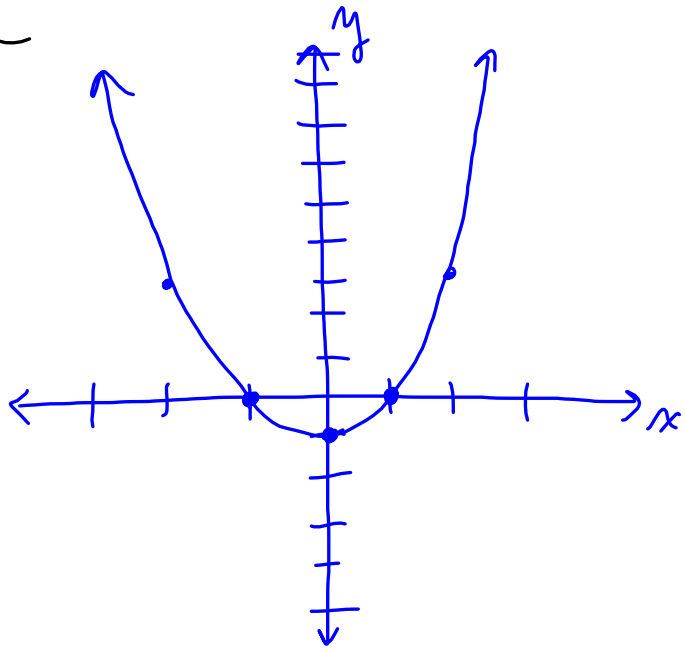
You can only buy whole cartons.

discrete

Problem 4: Graph

a. $y = x^2 - 1$

x	$y = x^2 - 1$	(x, y)
-2	$(-2)^2 - 1$ $4 - 1 = 3$	$(-2, 3)$
-1	$(-1)^2 - 1$ $1 - 1 = 0$	$(-1, 0)$
0	$(0)^2 - 1$ $0 - 1 = -1$	$(0, -1)$
1	$(1)^2 - 1$ $1 - 1 = 0$	$(1, 0)$
2	$(2)^2 - 1$ $4 - 1 = 3$	$(2, 3)$



b. $y = 2|x|$

x	$y = 2\|x\|$	(x, y)
-2	$2\|-2\|$ $2(2) = 4$	$(-2, 4)$
-1	$2\|-1\| = 2(1)$ 2	$(-1, 2)$
0	$2\|0\| = 2(0)$ $= 0$	$(0, 0)$
1	$2\|1\| = 2(1) = 2$	$(1, 2)$
2	$2\|2\| = 2(2)$ 4	$(2, 4)$