DO NOW

Graph $g(x) = \begin{cases} 2, & x \leq 1 \\ 0, & -2 < x < 1 \\ -2, & -4 < x \leq -2 \end{cases}$

y = 2

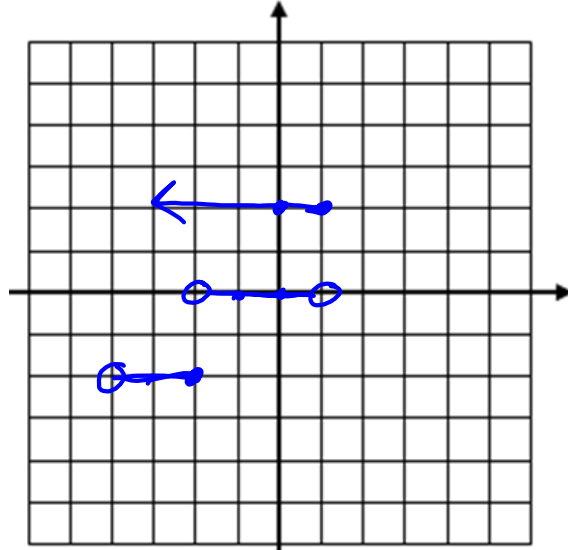| X	y
1	2
0	2

y = 0

X	y
-2	0
-1	0
0	0
1	0

y = -2

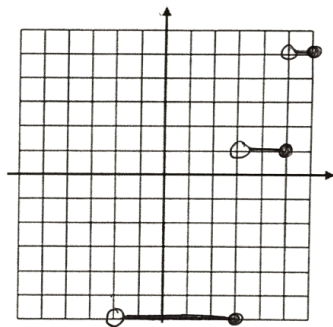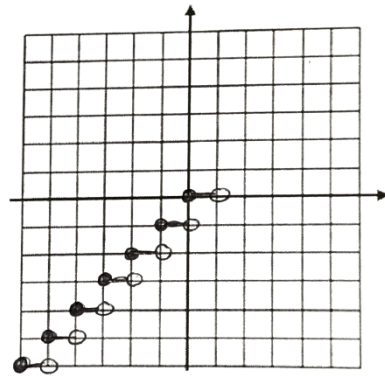| X	y
-4	-2
-3	-2
-2	-2

Jan 30-9:42 AM

Homework Answers
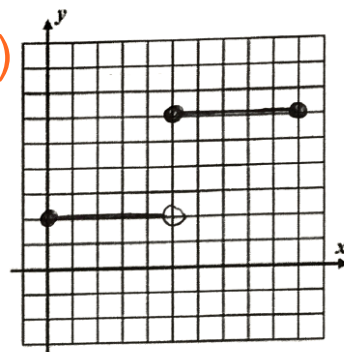
3.

5.

4.

(a)

$f(0) = 2$ $f(2) = 2$ $f(4) = 2$

$f(5) = 6$ $f(7) = 6$ $f(10) = 6$

(b)

Dec 12-7:49 AM

1

Step Functions

Word Problems

1. Your family data plan allows for you to use at most 5 GB for 40 dollars per month. If you use more than 5GB, up to 8 GB you must pay 60 dollars for the month. If you use more than 8 GB, you must pay 100 for the month. Graph this on the axes provided. (Hint, scale the y-axis appropriately).

$$f(x) = \begin{cases} 40 & 0 \le x \le 5 \\ 60 & 5 < x \le 8 \\ 100 & 8 < x \end{cases}$$

y=40

X	Y
0	40
	40
	40
	40
	40

y=60

X	Y
5	60
6	60
7	60
8	60

y=100

X	Y
8	100
	100
9	100
10	100

GB

Dec 12-3:38 PM

You are working as a software developer for Pied Piper Inc. Your pay depends on hours worked, it is as llows. If you work for up to 10 hours, you are paid $500. If you work 10 hours to 20 hours, you are paid $1,000. you work over 20 hours, up to 40 hours, you take home $2,500. Indicate this on the graph below
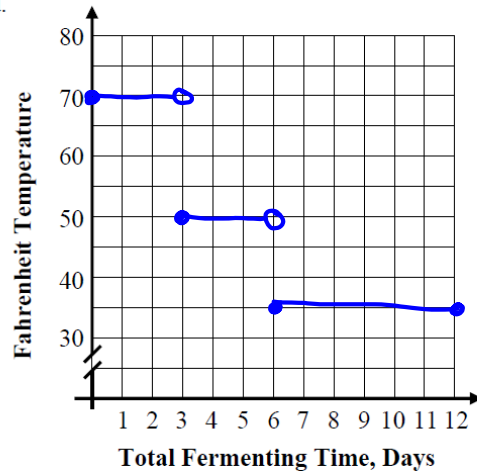
$$f(x) = \begin{cases} 500; & 0 \le x < 10 \\ 1000; & 10 \le x \le 20 \\ 2500; & 20 < x < 40 \end{cases}$$

Dec 12-3:50 PM

2

3. When kimchi is made, it is initially fermented for the first 3 days at a temperature of 70 degrees Fahrenheit and then immediately moved to a temperature of 50 degrees Fahrenheit for another 3 days after which it is put in a 35 degree refrigerator for 6 days.

The Fahrenheit temperature, F, of the kimchi can be modeled over time, t, in days with the equation below. Graph the kimchi's temperature on the grid provided.

$$F(t) = \begin{cases} 70 & 0 \leq t < 3 \\ 50 & 3 \leq t < 6 \\ 35 & 6 \leq t \leq 12 \end{cases}$$
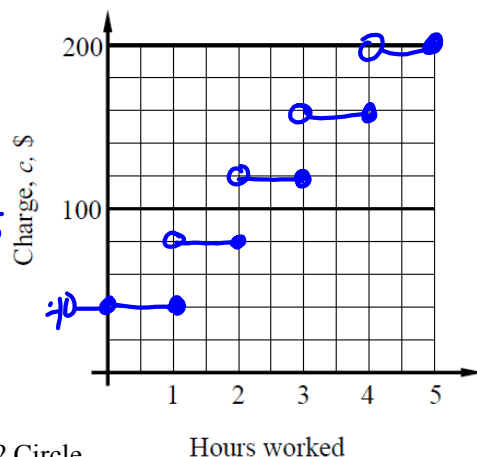

Total Fermenting Time, Days

Jan 7-11:14 AM

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4. An electrician works at a job site at a rate of $40 per hour or any portion of an hour. In other words, he will charge you $40 as soon as he comes up to the first hour, and then $40 for the second hour, and so on.

(a) Graph the amount the electrician charges, c, in dollars as a function of the number of hours he works.

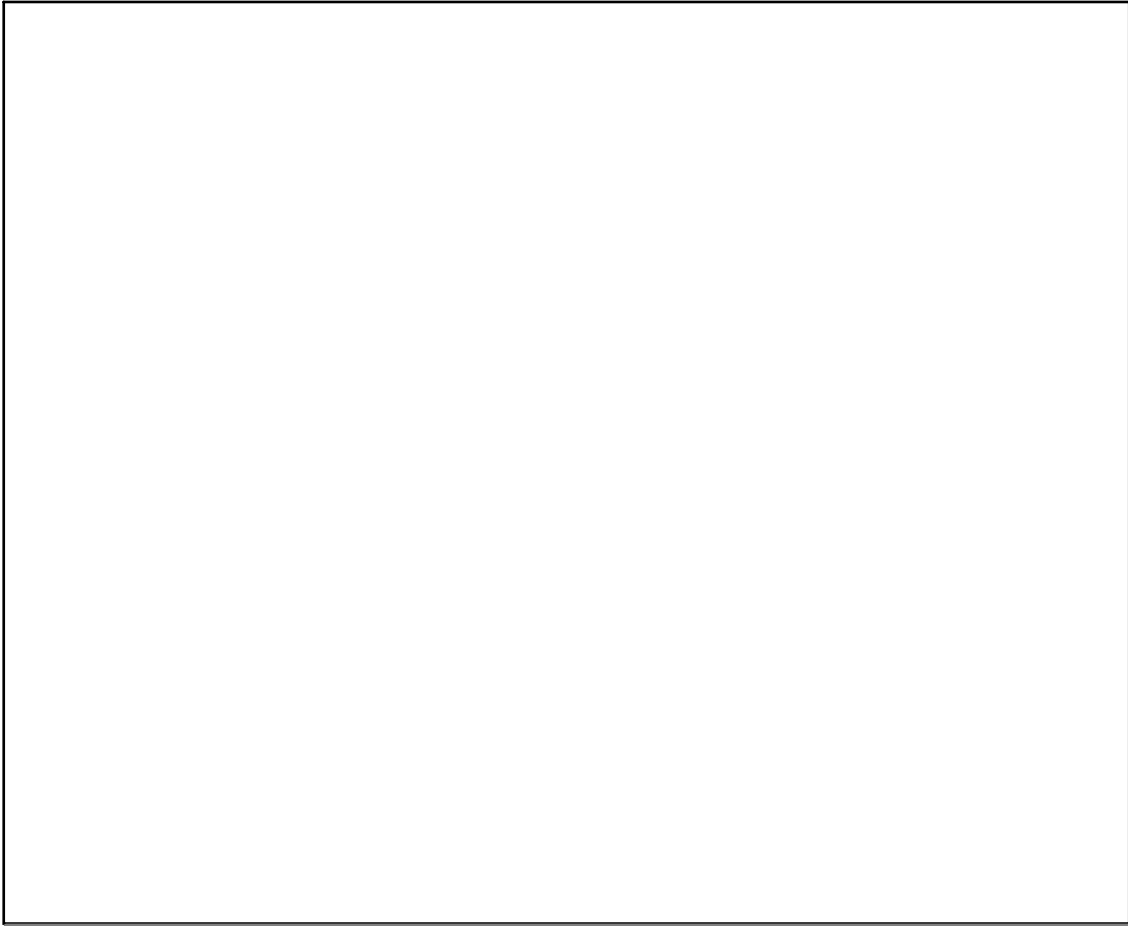$$f(c) = \begin{cases} 40 & 0 \leq x \leq 1 \\ 80 & 1 < x \leq 2 \\ 120 & 2 < x \leq 3 \\ 160 & 3 < x \leq 4 \\ 200 & 4 < x \leq 5 \end{cases}$$

Hours worked

(b) How much does he charge for working 3.5 hours? Circle the point on the graph the shows this answer.

$160

Jan 7-1:15 PM

Dec 12-3:38 PM