Name _____ Date _____

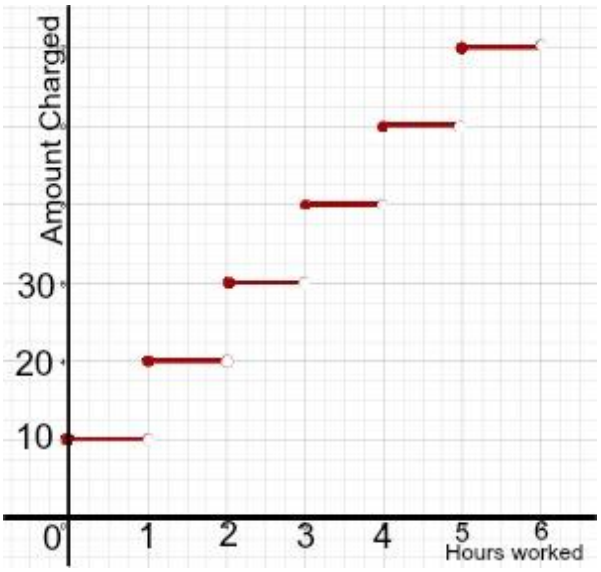
UNIT 6B **LESSON 12**

DO NOW: Suppose you start a cleaning business. You decide to charge each client based on how many hours you work for that client.

a. How much does your service cost for less than one hour?

b. How much does your service cost for one hour up to two hours?

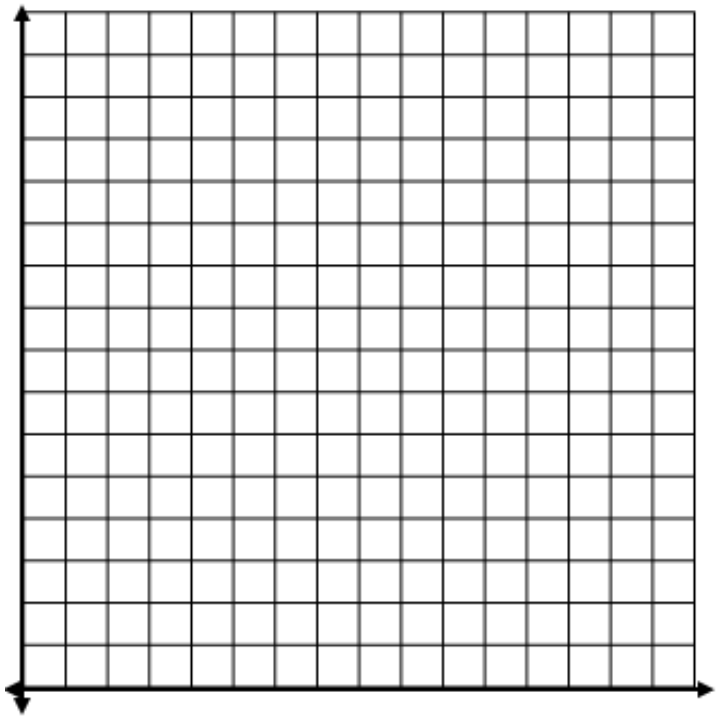
c. How much does your service cost for six hours up to seven hours?



AIM: Graphing Step Functions

1. A painter charges $15 per half hour, or any fraction of a half hour. Complete the following table.

x	f(x)
$0 < x \leq 0.5$	15
$0.5 < x \leq 1$	30
$1 < x \leq 1.5$	
$1.5 < x \leq 2$	
$2 < x \leq 2.5$	
$2.5 < x \leq 3$	
$3 < x \leq 3.5$	



a) What is the domain? _____

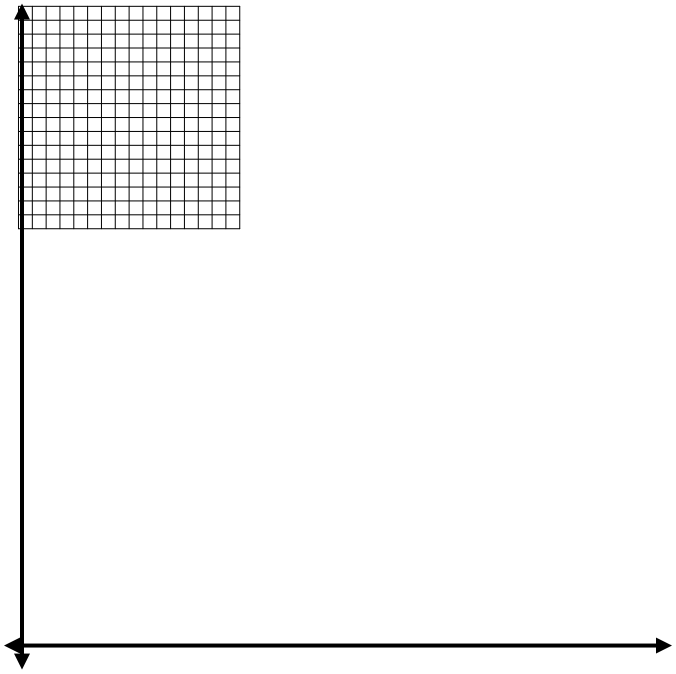
b) What is the range? _____

A _____ is a special type of function whose graph is a series of line segments.

The graph of a step function looks like a series of _____.

2. A school will charter buses so that the student body can attend a football game. Each bus holds a maximum of 60 students. Make a graph that models the relationship between the number of students, x, that attend the game and the number of buses, f(x), that are needed.

x	**f(x)**
$0 < x \leq 60$	
$60 < x \leq 120$	
$120 < x \leq 180$	
$180 < x \leq 240$	
$240 < x \leq 300$	

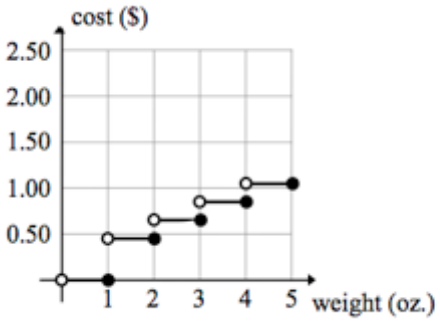


c) What is the domain? _____

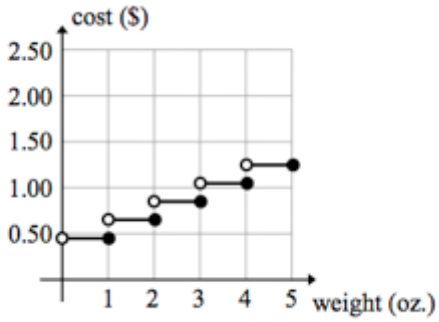
d) What is the range? _____

3. The postage for a letter is \$0.45 for letter weights up to and including one ounce. For each additional ounce, or portion of an ounce, another \$0.20 is charged. Which graph represents the postage of a letter weighing x ounces?

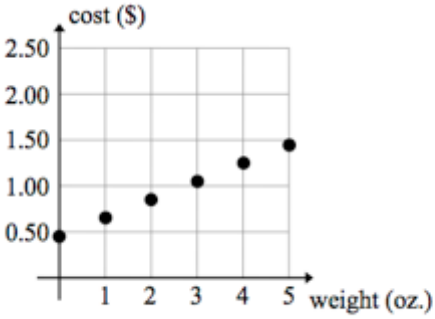
(A)



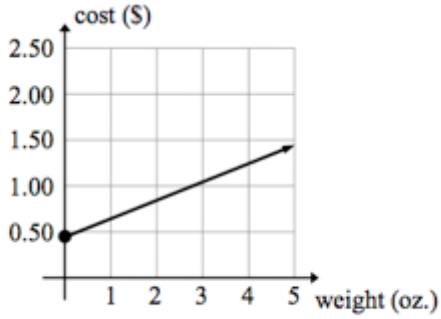
(B)



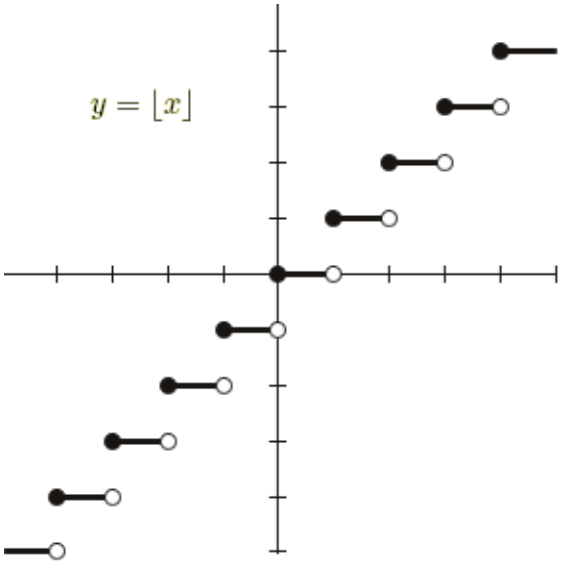
(C)



(D)



4. Looking at the function, $f(x)$, graphed below, answer the following questions:



a. What is the value of $f(1.5)$?

b. What is the value of $f(4)$?

c. What is the value of $f(-3)$?

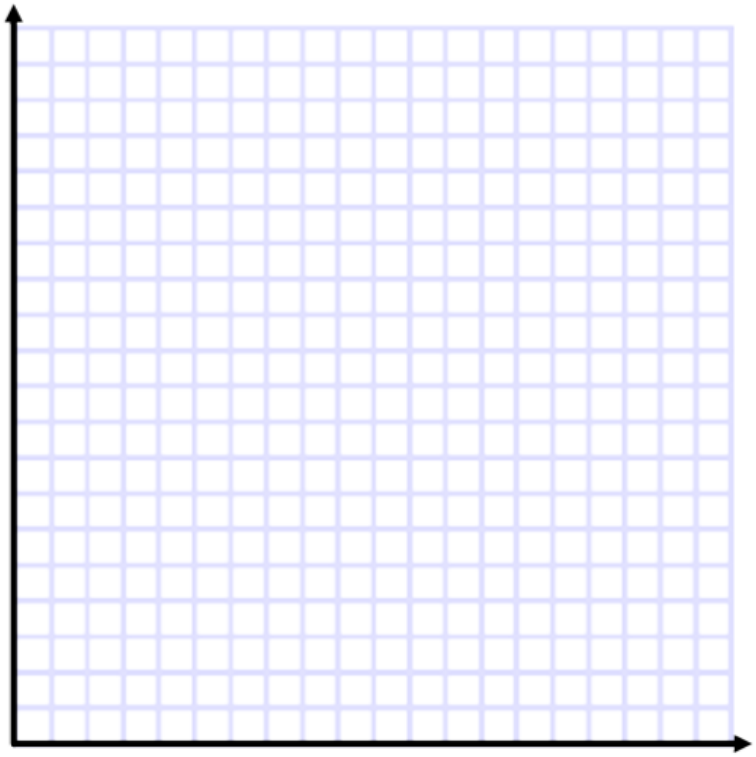
d. What is the important thing to keep in mind with this step function when evaluating?

5. Given the admission price for the given ages:

- Children 5 years and under: FREE
- Children between 5 years and 12 years, inclusive: $10.00
- Children between 12 years and 18 years, inclusive: $25.00
- Adults: $35.00

a) Write a piecewise function that gives the admission price for the given ages.

b) Graph the function.

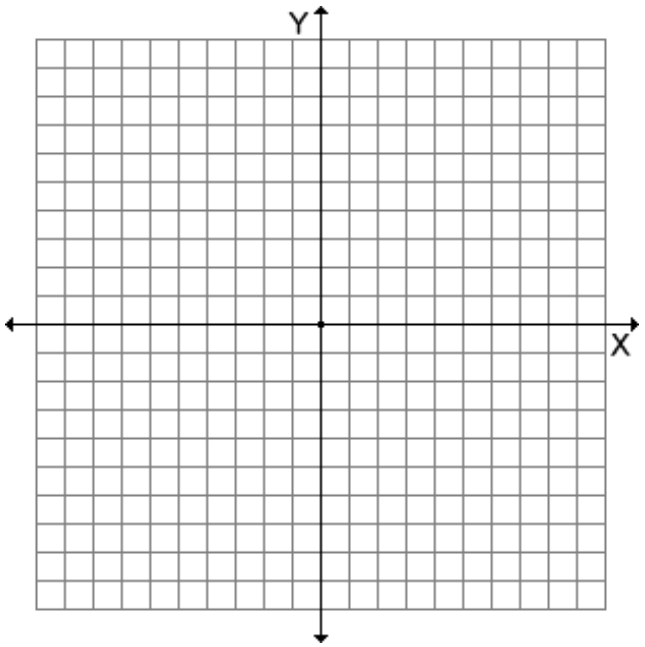


Name _____ Date _____

UNIT 6B **LESSON 12**

HW#_____

1. a. Graph : $f(x)=\begin{cases}\frac{3}{2}x+4 & x<0\\ -x & x\geq 0\end{cases}$

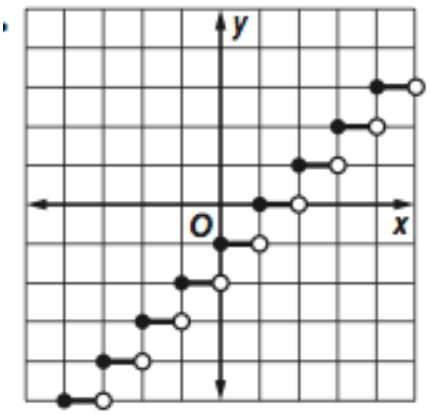


b. What type of graph is this called?_____

2. Evaluate the following for $f(x)=\begin{cases}x-4 & x\leq 1\\ 3 & 1<x<3\\ -2x+3 & x\geq 3\end{cases}$

a) $f(8)$ b) $f(2)$ c) $f(-5)$

3. Answer the following questions based on the accompanying graph.



a) What is the domain in set builder notation? _____

b) What is the range? _____

c) What is the domain in interval notation? _____

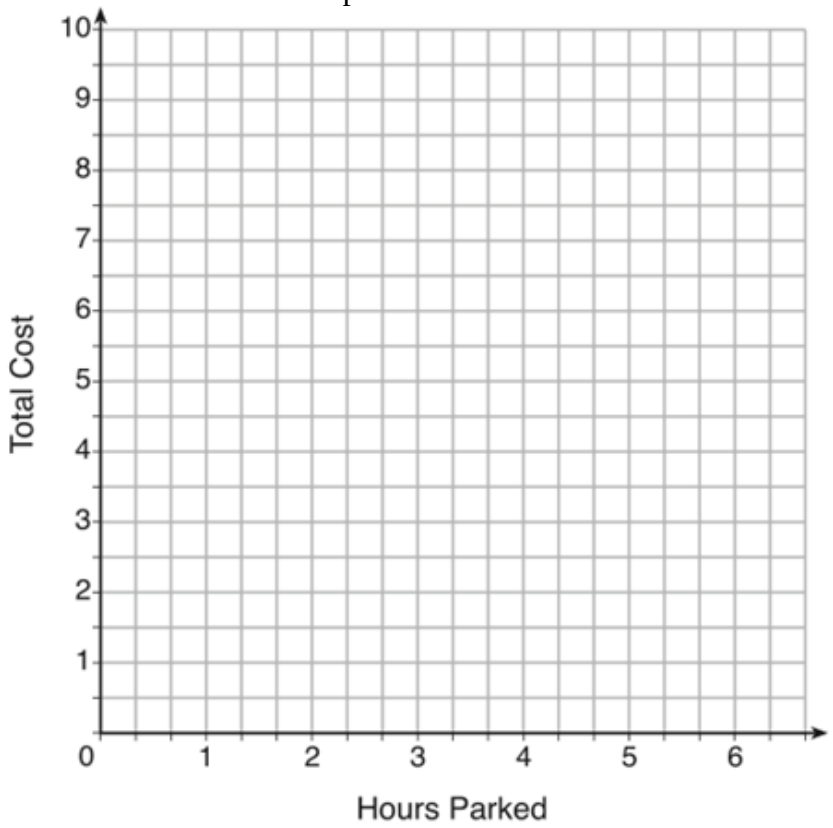
d) What type of graph is this called?_____

TURN OVER

4. The table below lists the total cost for parking for a period of time on a street in Albany, N.Y. The total cost is for any length of time up to and including the hours parked. For example, parking for up to and including 1 hour would cost $1.25; parking for 3.5 hours would cost $5.75.

a) Graph the step function that represents the cost for the number of hours parked.

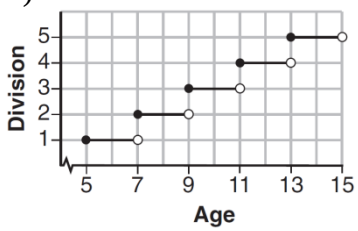
Hours Parked	Total Cost
1	1.25
2	2.50
3	4.00
4	5.75
5	7.75
6	10.00



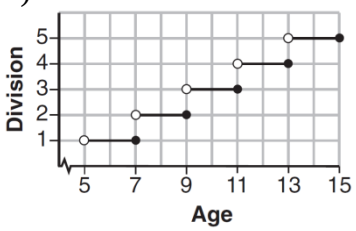
b) Explain how the cost per hour to park changes over the six-hour period.

5. Morgan can start wrestling at age 5 in Division 1. He remains in that division until his next odd birthday when he is required to move up to the next division level. Which graph correctly represents this information?

1)



2)



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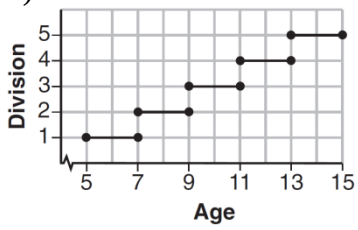
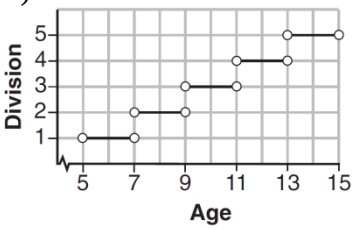


4)



*****DON'T FORGET TEXTBOOK!*****