## Domain & Range Homework: DUE NEXT CLASS

#1 – 4. Decide a reasonable domain and range for the following situations. Then determine whether the related functions are <u>continuous</u> or <u>discrete</u>.

1. Joe had a summer job that pays \$7.00 an hour and he worked between 15 and 35 hours every week. His weekly salary can be modeled by the equation: S = 7h, where S is his weekly salary and h is the number of hours he worked in a week.

2. The surface area of a cube can be found using the following formula:  $A = 6s^2$ , where A represents the surface area of the cube and s represents the length of one edge. Your geometry teacher wants you to draw a cube that has a length between 1 and 5 inches.

3. You conduct an experiment on the speed of sound waves in dry air at 86°. You record your data in a table (pictured below).

4. A 20-gallon bathtub is draining at a rate of 2.5 gallons per minute. The number of gallons *g* remaining is a function of the number of minutes *m*.

| Input<br>Time,<br>t (seconds) | Output<br>Distance,<br>d (miles) |
|-------------------------------|----------------------------------|
| 2                             | 0.434                            |
| 4                             | 0.868                            |
| 6                             | 1.302                            |
| 8                             | 1.736                            |
| 10                            | 2.170                            |

5. The table below represents the height of a building as a function of the number of stories the building has.

| Number of Stories         | 1  | 2  | 3  | 4  | 5  |
|---------------------------|----|----|----|----|----|
| Height of Building (feet) | 12 | 24 | 36 | 48 | 60 |

6. The drama club is planning a trip to an amusement par. They are taking a bus which holds 32 people. It will cost \$25 for parking and tickets to enter the park and \$22.50 per person. The equation that models this situation is c(n) = 22.5n + 25, where c represents the cost for the group to go to the park and represents the number of people who go on this excursion.

7. A moving company charges \$23.75 per quarter hour, with a minimum of 2 and a half hours per job.

8. A framing store determines the price of glass based on the area a of the picture to be framed, plus an additional \$6 for installation. The function t(a) describes the total cost of the frame, with glass and installation, based on the area of the picture.

**#9 – 12.** Graph each set on a number line and rewrite in interval notation. 9.  $x \ge 4$  10.  $2 < x \le 9$ 

11. 
$$x \neq 8$$
 12.  $x \neq 0$  and  $x \le 6$ 

#13 – 18. Use interval or set notation to represent each set of numbers.



Bonus!: Write in two different ways.

Х

16

12

8

4





8

4

-4 0

4

-8



## #23-25Graph each set on a number line.

23. {x | x = -3, -1, 3, 4, 7, 8, }

24. {
$$r | r = -6, -5, -4, -3, -2, -1, 0$$
}

25. { $t | t = 0, 1, 2, 3, \dots 10$ }