

Rubric for midterm

1. 3 points for correct choice and labeling of variables; 6 points for setting up equations; 6 points for solving equations
2. 10 points for each equation. I did not deduct points. But in the first case, the equations are different. But they define the same line.
3.  $a$  is the midpoint of  $-1$  and  $7$ .  $b$  is  $1/2$  of the distance between  $-1$  and  $7$ . So the answer is

$$|x - 3| \leq 4.$$

4. 4 points each for three rules. I deducted up to 3 points for a incorrect statement about which rules were really different or if the three rules all defined the same function.

5. 5 points each for correctly graphing each of the three lines. 3 points each for choosing your region on the right side of each line. 1 point for  $\leq$  versus  $=$ .

6. a) 5 points for a correct story. (I deducted one point if the response was a description of the graph rather than a 'story'.) Notice that the problem was given in terms of the number of feet the dog-walker walked so it is quite possible to come back home.

b) (5 points for correctly interpreting the parameters and an explanation of why it performing a linear regression was a bad idea.)

2 is the estimate average speed of the walk. 140 is the estimated distance along the path where the walk started. This makes no sense for several reasons. It is impossible to start 140 feet from where you start. There is absolutely no reason to think that a dog walks at a constant rate. Finding linear approximation in this situation is silly.

c) (5 points). There is a function for the table values given. The simplest reason is that the table does not give two outputs for the same input. One could also argue that a piecewise linear function would approximate the trip described.

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