



Using Linear and Absolute Value Functions

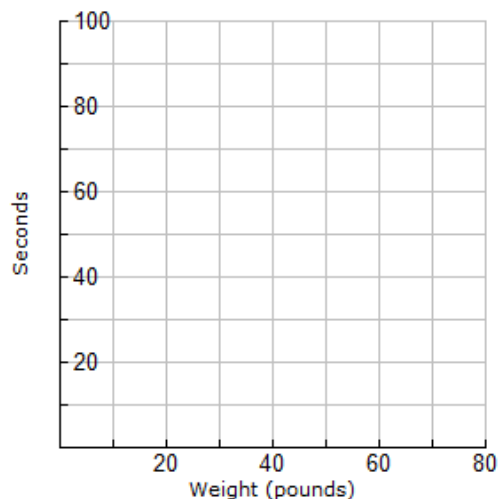
Independent Practice

Use the following scenario and table for questions 1 – 5.

Sarah recorded the weights of dogs and the time it took the same dogs to complete an agility course in seconds in the table below.

Weight of Dog (pounds)	Time to Complete Course (seconds)
5	20
19	20
22	32
22	42
38	60
40	50
52	58
60	66
66	80
72	64

- Graph the data from the table on the grid below.



Name _____ Date _____

2. Complete the statement to describe the relationship in the data.

The data appear to have a _____
(positive or negative) (linear or nonlinear)
correlation.

3. Generate the equation that represents a line of best fit.

4. Does the correlation coefficient support your statement in problem #2?
Explain why or why not.

5. Use the equation from #3 to predict how long it would take a dog to run the agility course if the dog weighed 90 pounds.

Use the following scenario and table for questions 6 – 9.

A football field is 100 yards long and has marked yard lines every 5 yards with each yard line marked along both sidelines and along two sets of hash marks inside the field.

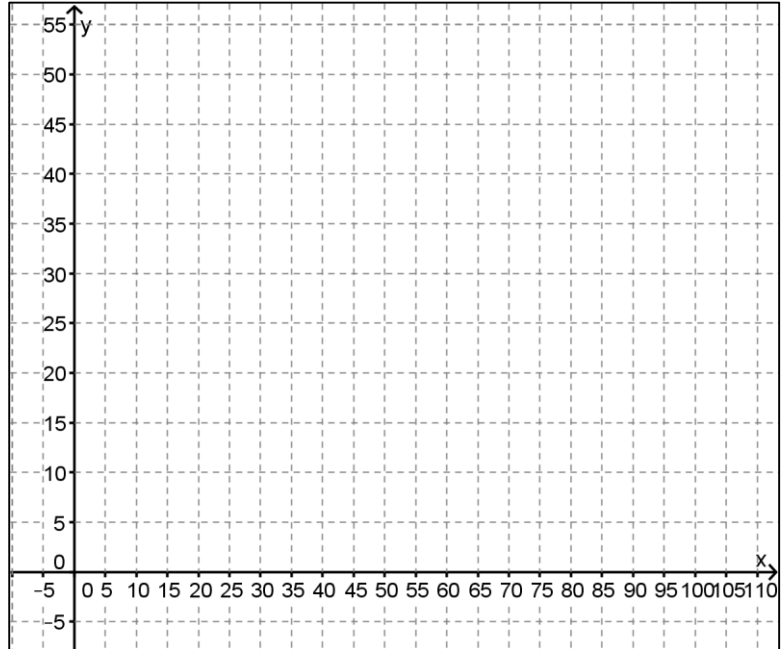
Distance from One End Zone (yd)	0	10	20	30	40	50	60	70	80	90	100
Marked Yard Line	0	10	20	30	40	50	40	30	20	10	0

6. Use the data in the table to write a function, $f(x)$, that could be used to determine the marked yard line if you know x , the distance from one end zone to that yard line.



7. Use your function to write an equation you could use to solve for x , the distance from one end zone if the football is on the 35 yard line.

8. Make a scatterplot of the data and graph the function over the scatterplot. Use the graph to show the solution to your equation from question #7.



9. Solve your equation from question #7 symbolically. Write your solution in set notation.

For questions 10 – 13, solve the equation or inequality.

10. $|4(x - 6.5)| = 24$

12. $|4x - 9| < 23$

11. $|\frac{3}{4}(8x + 12)| = 5$

13. $|3(2x + 5)| > 40$



Name _____ Date _____

For questions 14 – 15, identify the transformations that would be done to $f(x) = |x|$ in order to generate the given function.

14. $g(x) = 3|x - 5| + 11$

15. $h(x) = -\frac{1}{2}|x + 2| - 2.5$

