

Notes 6-6

Scatter Plots and Equations of Lines

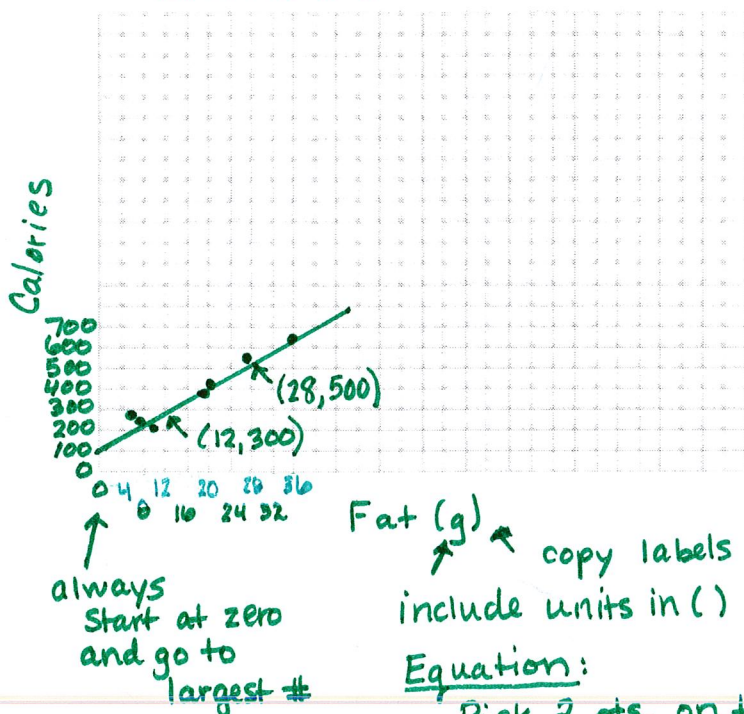
Ex. 1:

Graph the data in the table and draw a trend line. What is a reasonable equation for the trend line? Estimate the number of calories in a fast-food that has 14g of fat.

Calories and Fat in Selected Fast-Food Meals

Fat (g)	6	7	10	19	20	27	36
Calories	276	260	220	388	430	550	633

Calories and Fat in Selected Fast-Food Meals



* Line of best fit - try to get as many points on the line & the ones that don't fall on the line cut it in half as best you can having same amount above line as below the line. It is an estimate if done by hand.

6 to 10 Rule (to find scale)
largest #
 $36 \div 4 = 9$ ← answer must be between 6 & 10
count by

Equation:

Pick 2 pts. on the line (12, 300) (28, 500)

$$m = \frac{\Delta y}{\Delta x} = \frac{500 - 300}{28 - 12} = \frac{200}{16} = 12.5$$

Pt: slope form (can use either pt.)
 $y - 300 = 12.5(x - 12)$

Ex. 2: Use the graphing calculator to find the equation of the line of best fit. Let 91 correspond to 1991. What is the correlation coefficient?

1991	1992	1993	1994	1995	1996	1997	1998	1999
4.8	4.9	5.2	5.4	5.5	6.0	6.4	7.0	7.4

$y = .33x - 25.33$
 $r = .98$

$y - 300 = 12.5x - 150 + 300$
 $y = 12.5x + 150$
change to slope intercept form

Estimate Calories for 14g fat

cal $y = 12.5(14) + 150$ * Eqn. from above
 $y = 175 + 150 \approx 325$ cal

answer < smallest # then there is a break

To determine a break in scale, find range (biggest # - smallest #)
* 6 to 10 rule with break -
range ÷ count by = 6 to 10
answer between 6 to 10

Tells what graph is about, like a topic sentence

can copy title from table