1. Uber rates in Kansas City include a $3 booking fee and $1.10 base fare as well as $0.98 per mile traveled. (a) Write a function for the total fare (F) in terms of the number of miles (x) traveled. (b) What is the total fare for a 14-mile Uber trip?

$y = mx + b$

y-int = fixed cost

$y - y_1 = m(x - x_1)$

need 2 coord.

flat = $4.10

m = rate = 0.98

$y = 0.98x + 4.10$

$F = 0.98x + 4.10$

$F = 0.98(14) + 4.10$

$F = \$17.82$

1. A local plumber charges a service fee plus an hourly rate for labor. She charged $103.75 for a job requiring 2.5 hours of labor and $88.70 for a job requiring 1 hour and 48 minutes. (a) Write an equation for total cost (C) in terms of the numbers of hours (x). (b) What is her hourly charge? (c) What is her service fee? (d) What would be the total charges for an 8-hour job?

(hrs, cost) hrs. Cost (2.5, 103.75) * (1.8, 88.70)

$\frac{48}{60} = 0.8$

$m = \frac{103.75 - 88.70}{2.5 - 1.8} = \frac{15.05}{0.7} = \$21.5/\text{hr.}$

Point-Slope

$y - 88.70 = 21.5(x - 1.8)$

$y - 88.70 = 21.5x - 38.7$

$+88.7$

$C = 21.5x + 50$

How many hours can she work for 500?

$500 = 21.5x + 50$

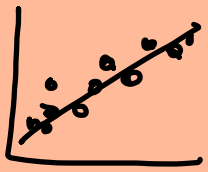
-50

$450 = 21.5x$

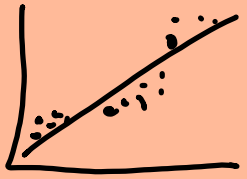
$20.93 \text{ hr} = x$

Good Fit?

1) Points balanced on each side of line



Good



Bad

2) r^2 = coefficient of determination
- how well the line fits the points

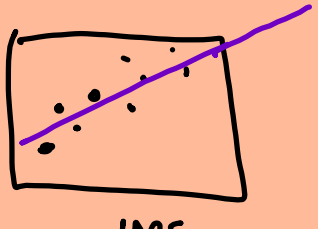
$r^2 \geq 0.75$ good

$0.50 \leq r^2 < 0.75$ fair

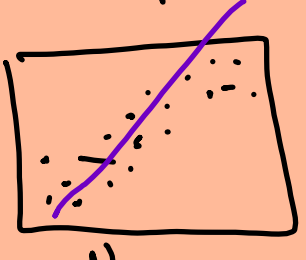
$r^2 < 0.50$ poor

r = correlation coefficient
how strong is the relationship between the x- & y-coordinates.

3) How well does the line predict the future?



yes



No