

The table below shows how many years someone has been working at a particular company and what their annual salary (in thousands of dollars) is.

Years	0.5	1	1	1.5	2	2	3	4	4.5	9	9.5	15
Salary (thousands of \$)	55	63	64	62	64	68	70	74	74	80	85	90

- Use your calculator to make a scatter plot of the data.
- Have the calculator plot the linear regression line. What is the linear regression equation?



$$y = -2.2x + 61$$

- What does the slope of the regression equation mean in terms of the situation?
- What does the y-intercept of the regression equation mean in terms of the situation?

\$ 2.2 Thousand every year

Start @ \$61,000

Your calculator can also find a correlation coefficient that will tell you how good of a fit the regression equation is to the data. The closer the correlation coefficient is to 1 (positive correlation) or -1 (negative correlation), the better the regression equation fits the data.

- Match the following r values with the appropriate graphs. ($r = 0$ is used twice).

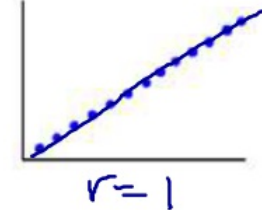
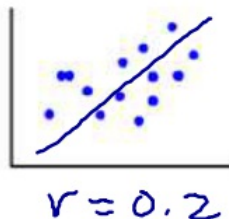
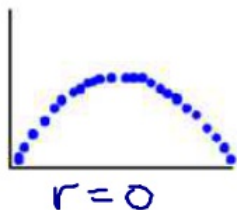
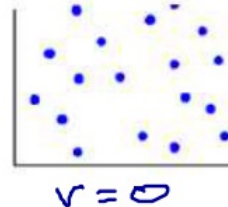
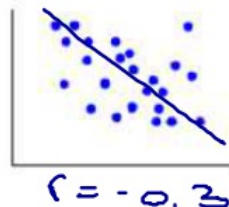
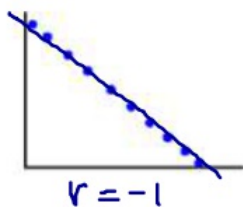
$r = -0.3$

$r = 1$

$r = 0$

$r = -1$

$r = 0.2$



- Find the correlation coefficient for your linear regression in #2. What does this tell you about the fit of the regression line to the data?

$r = 0.945$ - close to 1
data is related.

The table below shows how many days it has been since the person got paid, and how much money is in their checking account

Day	\$ in Checking Account
3	5430
4	8128
8	6850
9	2720
2	2231
10	129
13	971
0	3756
1	3184
7	1979
6	2621

7. What is the linear regression equation?

$$y = -228x + 4762$$

8. What does the slope of the equation tell you about the situation?

balance drops \$228 each day

9. What does the y-intercept of the equation tell you about the situation?

start with \$4,762

10. Predict how much someone would have in their checking account 14 days after getting paid.

$$y = -228(14) + 4762$$

$$y = 1570 \text{ or } \$1,570$$

11. What is the correlation coefficient?

$$r = -0.384$$

12. What does the correlation coefficient tell you about the data?

some but not really related.

13. Why do you think this situation has such poor correlation?

Different Deposit and withdrawals that are not consistent.