

## Tables for linear regression

1) Theater ticket sales on successive nights

Patrons (p)	Revenue (R)
32	480
33	495
40	600
81	1215

- a) Derive a linear model for the data, rounding to the thousandth.
- b) Use the linear model to predict revenue if 121 patrons attend.
- c) What is the value of the correlation coefficient? In general, what do correlation coefficient values indicate? What does this value tell us about this data in particular?

2) Distance from New City vs. median housing prices

Distance from New City (mi.)	Median home price (in \$1000s)
12	390
15	400
28	310
20	290
5	410
9	400
25	300
2	490
13	370
10	350
18	320
8	400

- a) Derive a linear model for the data, rounding to the thousandth.
- b) Use the linear model to predict the median housing prices in a village 33 miles from New City.
- c) What is the value of the correlation coefficient? In general, what do correlation coefficient values indicate? What does this value tell us about this data in particular?

3) Fuel efficiency of my hybrid airplane

Fuel consumed (gallons)	Distance flown (miles)
50	403
15	99
12	85
40	290
55	511
3	5
25	120
88	700
16	101

- a) Derive a linear model for the data, rounding to the thousandth.
- b) Use the linear model to predict fuel use for a 150-mile trip and a 1000-mile trip.
- c) What is the value of the correlation coefficient? In general, what do correlation coefficient values indicate? What does this value tell us about this data in particular?