area	price
2600	550000
3000	565000
3200	610000
3600	680000
4000	725000

area	price
2600	550000
3000	565000
3200	610000
3600	680000
4000	725000

Given these home prices find out prices of homes whose area is,

3300 square feet
5000 square feet

Minimize

$$\sum_{i=1}^{n} (\Delta i)^2$$
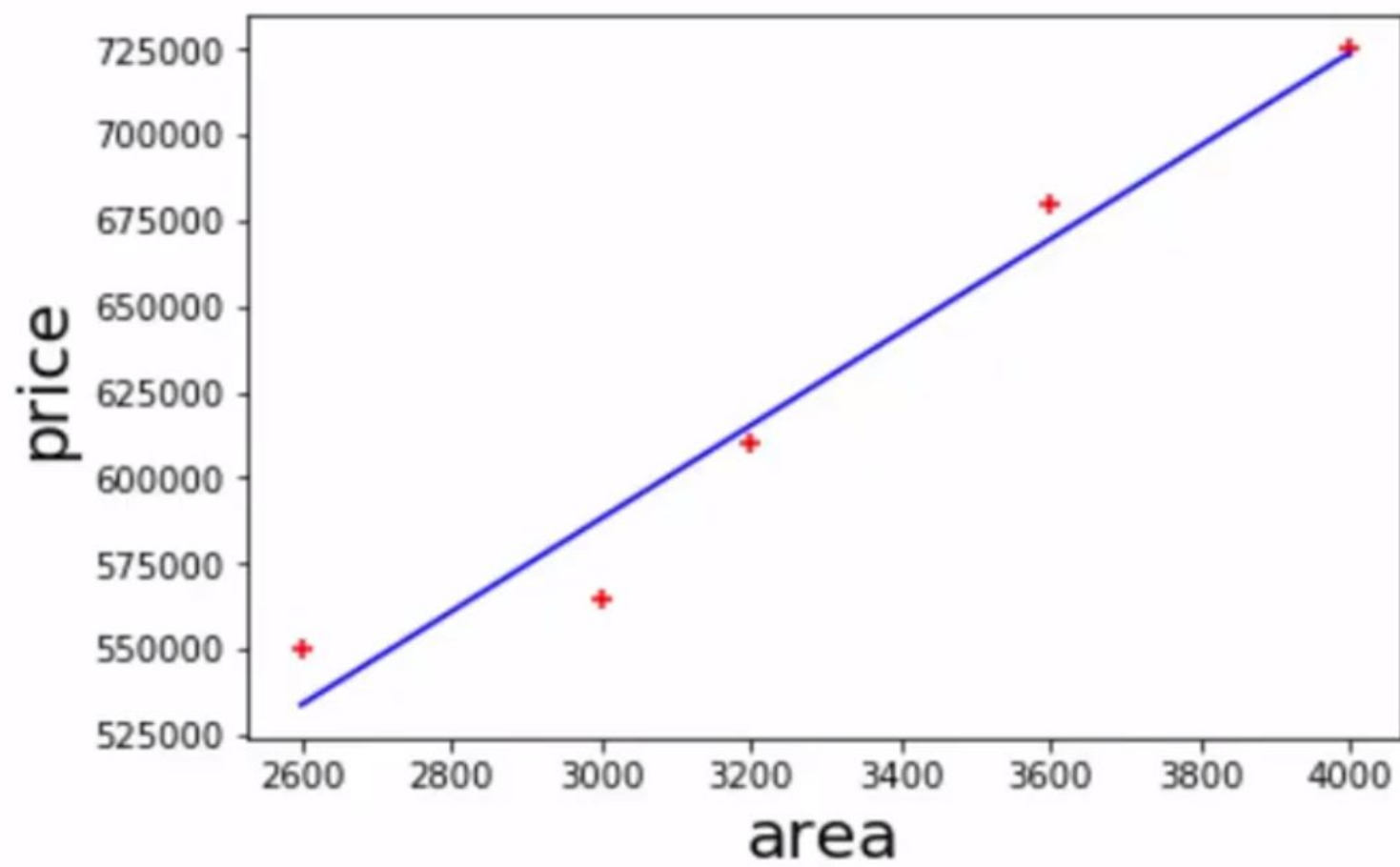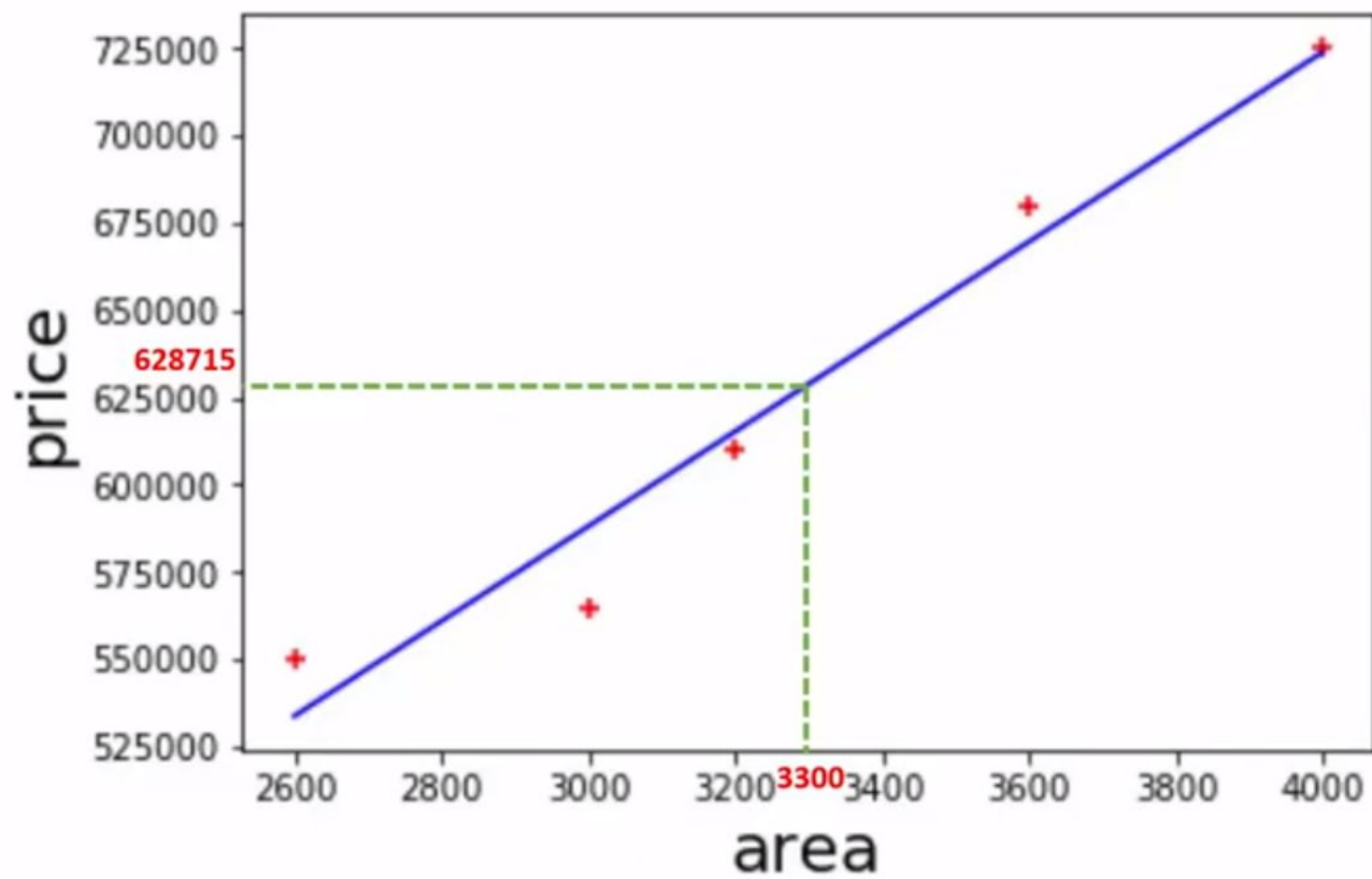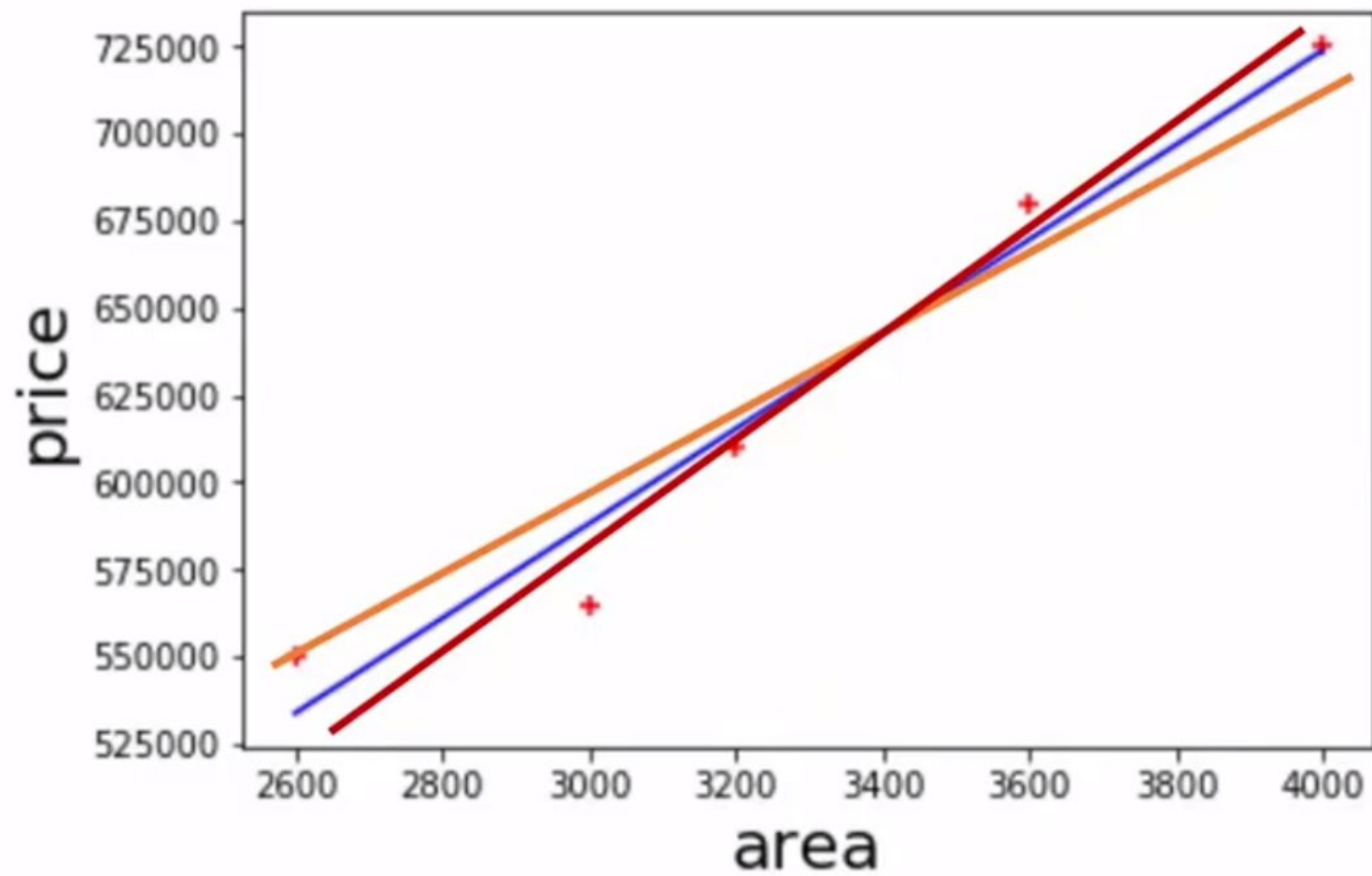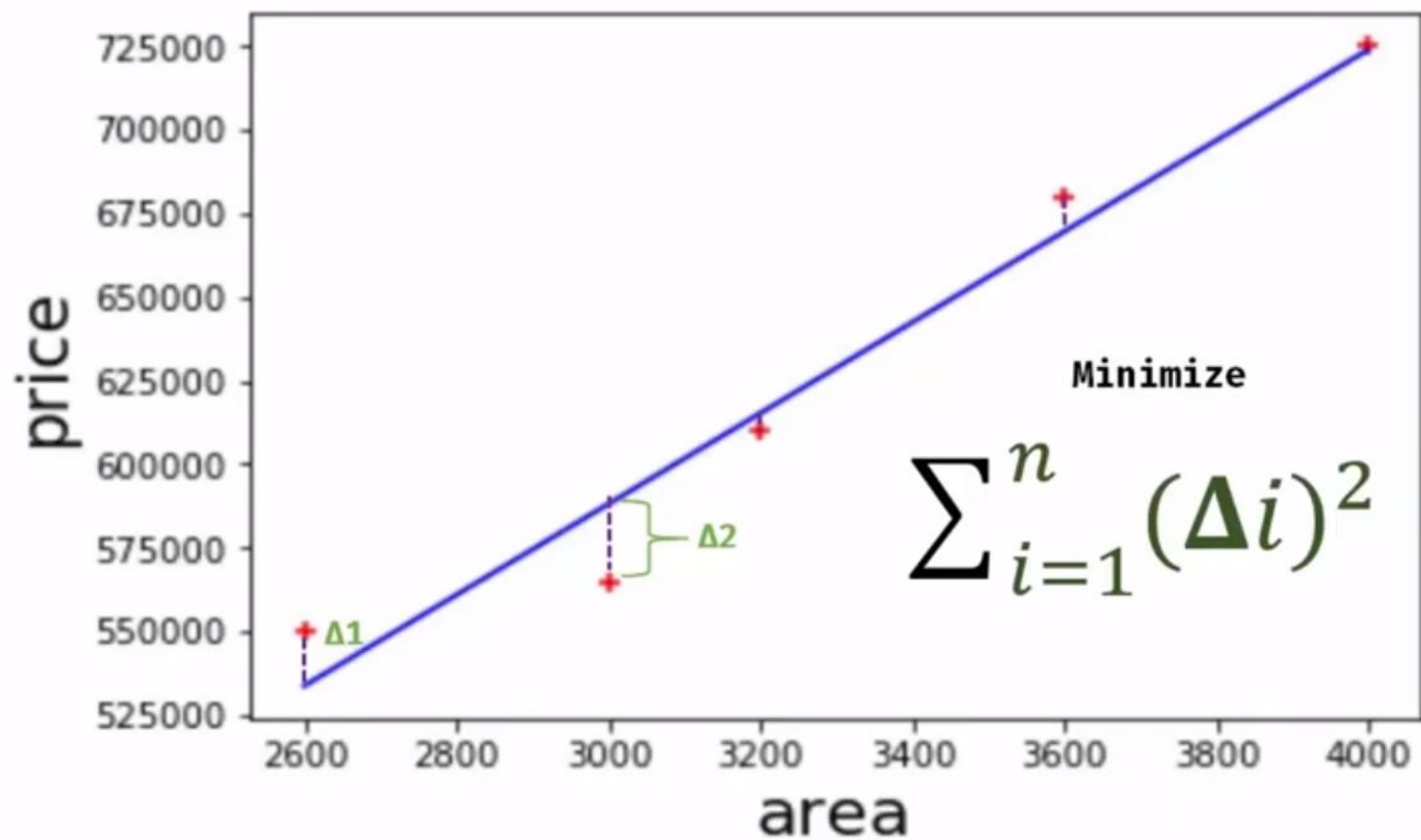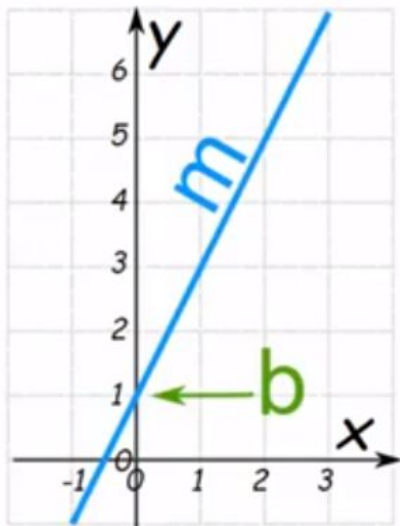
price = m * area + b

$$y = mx + b$$

Slope (or Gradient)   Y Intercept

$$\text{price} = m * \text{area} + b$$

Dependent
variable

Independent
variable

area	price
2600	550000
3000	565000
3200	610000
3600	680000
4000	725000

areas.csv - Excel

File   Home   Insert   Page Layout   Formulas   Data   Review   View   Help   Power Pivot   Tell me what you want to do

A2   1000

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	area														
2	1000														
3	1500														
4	2300														
5	3540														
6	4120														
7	4560														
8	5490														
9	3460														
10	4750														
11	2300														
12	9000														
13	8600														
14	7100														
15															
16															
17															
18															
19															
20															
21															
22															

```
In [11]: model.intercept_
```

Out[11]: 180616.43835616432

```
In [12]: 135.78767123*5000+180616.43835616432
```

Out[12]: 859554.7945061643

```
In [13]: area_df = pd.read_csv("areas.csv")
         area_df
```

Out[13]:

	area
0	1000
1	1500
2	2300
3	3540
4	4120
5	4560
6	5490
7	3460
8	4750
9	2300
10	9000

	A	B	C	D	E	F	G	H	I	J	K
1		area	prices								
2	0	1000	316404.1								
3	1	1500	384297.9								
4	2	2300	492928.1								
5	3	3540	661304.8								
6	4	4120	740061.6								
7	5	4560	799808.2								
8	6	5490	926090.8								
9	7	3460	650441.8								
10	8	4750	825607.9								
11	9	2300	492928.1								
12	10	9000	1402705								
13	11	8600	1348390								
14	12	7100	1144709								
15											
16											
17											