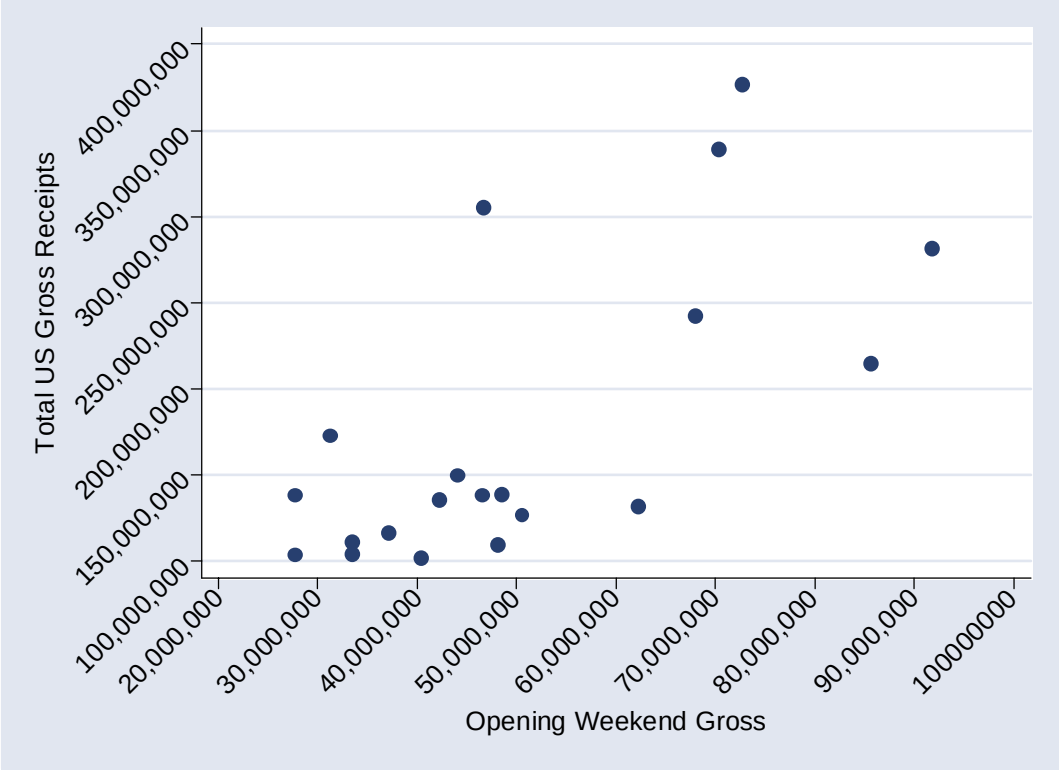
	title	totusgross	weekend1
1.	The Lord of the Rings: The Return of the King	377,027,325	72,629,713
2.	Finding Nemo	339,714,978	70,251,710
3.	Pirates of the Caribbean: The Curse of the Black Pearl	305,413,918	46,630,690
4.	The Matrix Reloaded	281,576,461	91,774,413
5.	Bruce Almighty	242,829,261	67,953,330
6.	X2: X-Men United	214,949,694	85,558,731
7.	Elf	173,398,518	31,113,501
8.	Terminator 3: Rise of the Machines	150,371,112	44,041,440
9.	The Matrix Revolutions	139,270,910	48,475,154
10.	Cheaper by the Dozen	138,614,544	27,557,647
11.	Bad Boys II	138,608,444	46,522,560
12.	Anger Management	135,645,823	42,220,847
13.	Hulk	132,177,234	62,128,420
14.	2 Fast 2 Furious	127,154,901	50,472,480
15.	S.W.A.T.	116,934,650	37,062,535
16.	Spy Kids 3D: Game Over	111,761,982	33,417,739
17.	Scary Movie 3	110,003,217	48,113,770
18.	American Wedding	104,565,114	33,369,440
19.	Daddy Day Care	104,297,061	27,623,580
20.	Daredevil	102,543,518	40,310,419

The correlation r of first weekend ticket sales and total domestic gross receipts is .68. The means and SDs are below:

Variable	Obs	Mean	Std. Dev.	Min	Max
totusgross	20	177342928	85658496	102543518	377027325
weekend1	20	50361404	18775706	27557647	91774413



A line that passes through the origin can be written with just a slope and no intercept:

y = mx where m is the SLOPE (or y=bx in some textbooks)

We can substitute Z scores for Y and X so now this looks like

$Z_y = m*Z_x$

As your book states (p. 138) this line won't fall perfectly on every point (if you look at the graph you can see that there is no way one straight line will be driven through all points on the graph). So generally we write

$$\hat{Z}_y = mZ_x$$

Which recognizes that the Z_y is some predicted value.

It turns out that the best value for the slope of the line is the correlation, r, so we can rewrite this as

$$\hat{Z}_y = rZ_x$$

Now, what about "The Incredibles" we can express it in terms of Z scores. The movie is (70467623-50361404)/ 18775706 = 1.07 standard deviations above the average first weekend (the X variable) (recognize the formula? It's

$$Z_x = \frac{x - \mu_x}{\sigma}$$

where we just use the mean and standard deviation of the x variable (first weekend ticket sales) as substitutes for μ (mu) and σ (sigma).

If we take the 1.07 standard deviations and multiply it by the correlation .68 we can relate it to the Y variable (total gross receipts) and get a .73Z for Y. Recall that Z scores are just standard deviations.

We can now give an actual dollar value prediction for Y by multiplying .73 by the standard deviation for total gross receipts of the Y variable 85,658,496:

.73 * 85,658,496 = 62,530,702

and adding this result to the average total gross receipts ($177,342,928 + $62,530,702) = $239,873,630.

So this current movie's first weekend was $70,467,623, given what we know about first weekend's relationship to total gross receipts, we predict (or expect) receipts of about $239,873,630