

Mins X running	Weight Y	X <sup>2</sup>	X, * Y
90	180	8100	16200
50	178	2500	8900
60	179	3600	10740
70	177	4900	12390
62	180	3844	11160
55	179	3025	9845
58	177	3364	10266
60	176	3600	10560
$\Sigma$ 505	1,426	32,933	90,061

$$\text{Slope } m = \frac{(8 \times 90,061) - (505 \times 1,426)}{(8 \times 32,933) - 505^2} = \frac{358}{8439} = .04$$

$$b \text{ intercept} = \frac{1,426 - .04 \times 505}{8} = 175.725$$

Mins X running	Weight Y	$y = .04x + 175.725$	
90	180	$y = .04(90) + 175.725$	179.325
50	178	$y = .04(50) + 175.725$	177.725
60	179	$y = .04(60) + 175.725$	178.125
70	177	$y = .04(70) + 175.725$	178.525
62	180	$y = .04(62) + 175.725$	178.205
55	179	$y = .04(55) + 175.725$	177.925
58	177	$y = .04(58) + 175.725$	178.045
60	176	$y = .04(60) + 175.725$	178.125
$\Sigma$ 505	1,426		

Least square - y	Error
179.325 - 180	-.675
177.725 - 178	-.275
178.125 - 179	-.875
178.525 - 177	1.525
178.205 - 180	-1.795
177.925 - 179	-1.075
178.045 - 177	1.045
178.125 - 176	2.125

$$\text{Prediction: } y = .04(65) + 175.725 = \boxed{178.325}$$

Weight by week vs. Minutes Running  
for the week

