

Example 4.8 - Big Mac Revisited (p.162)

Country	Big Mac Cost (in U.S. Dollars)	$(1) = \bar{X}_i$	$(3) = (1) - \bar{X}$	$(4) = (3) \times (3)$	$(X_i - \bar{X})^2$
Austria	3.93		-0.14	0.02	
Belgium	4.29		0.22	0.05	
Estonia	3.36		-0.71	0.50	
Finland	4.75		0.68	0.46	
France	4.52		0.45	0.20	
Germany	4.25		0.18	0.03	
Greece	3.53		-0.54	0.29	
Ireland	4.04		-0.03	0.00	
Italy	4.46		0.39	0.15	
Netherlands	4.00		-0.07	0.00	
Portugal	3.48		-0.59	0.35	
Spain	4.23		0.16	0.03	
Total	48.84			2.09	

$$\begin{aligned}
 \text{Sample mean} &= \frac{48.84}{12} \\
 \text{Sample variance} &= \text{Total of (4)} / (n - 1) = \frac{2.09}{(12 - 1)} = 0.19 \\
 \text{Sample deviation} &= \text{Square root of (5)} = \sqrt{0.19} = 0.436
 \end{aligned}$$

Note: n = 12

Exercise 4.24 - Smart Phone Prices (p.166)

$$= X_i - \mu = (X_i - \mu)^2$$

(1) $= X_i$

(3) = (1) - (2) (4) = (3) x (3)

Smart Phone Prices (\$)

110	-32.857	1,079.59
130	-12.857	165.31
100	-42.857	1,836.73
145	2.143	4.59
200	57.143	3,265.31
180	37.143	1,379.59
135	-7.857	61.73

Total

1000 7,792.86

$$= \frac{1,000}{7}$$

Population mean

$$\text{Population variance} = \frac{\text{Total of (4)}}{N} = \frac{142.857}{7} = 20.408$$

$$\text{Population deviation} = \text{Square root of (5)} = \sqrt{20.408} = 4.517$$

Note:

N = 7