

1. Inyección de gas en millones de dólares.

Año	Millones de Q.	$(x - \bar{x})$	$(x - \bar{x})^2$	
2011	12.97	1.03	1.06	
2012	13.90	0.10	0.01	
2013	14.67	0.67	0.45	
2014	14.43	0.43	0.19	
2015	14.05	0.05	0	1.71

$$\bar{x} = \frac{\sum x}{N} = \bar{x} = \frac{70.02}{5} = 14$$

$$Dm = \frac{\sum (x - \bar{x})}{N}$$

$$Dm = \frac{2.29}{5} = 0.46$$

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} \quad S = \sqrt{\frac{1.71}{5}}$$

$$S = \sqrt{0.34} \quad S = 0.58$$

$$R = Dma - Dme + 1$$

$$R = 14.67 - 12.97 + 1$$

$$R = 1.70 + 1$$

$$R = 2.70$$

2. Proyección de crecimiento económico de un año (en porcentajes)

País	%	$(x - \bar{x})$	$(x - \bar{x})^2$
Guatemala	2.5	0.82	0.67
El Salvador	2.5	0.82	0.67
Honduras	3.1	0.22	0.05
Nicaragua	3	0.32	0.10
Costa Rica	3.4	0.08	0
Panamá	5.4	2.08	4.33

$$\bar{x} = \frac{\sum (x - \bar{x})}{N} \quad \bar{x} = \frac{19.90}{6} \quad \bar{x} = 3.32$$

$$D.M. = \frac{\sum (x - \bar{x})^2}{6} \quad D.M. = \frac{4.34}{6} \quad D.M. = 0.72$$

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} \quad S = \sqrt{4.34}$$

$$S = \sqrt{\frac{5.82}{6}} \quad S = \sqrt{0.97} \quad S = \sqrt{\quad}$$

$$S = 0.99$$

$$R = D_{ma} - D_{me} + 1 \quad R = 5.4 - 2.5 + 1$$

$$R = 2.90 + 1 \quad R = 3.90$$

3. Volumen de importación de carne de pollo en libras de Estados Unidos a Guatemala en los siguientes años.

año	Libras	$(x - \bar{x})$	$(x - \bar{x})^2$
2011	162,812	64,104.83	4,109,429.22
2012	186,978	39,938.83	1,595,110.41
2013	195,335	31,581.83	997,411.98
2014	242,487	75,570.17	5,710,730.19
2015	277,390	50,473.17	2,547,540.89
2016	296,499	69,582.17	4,841,678.38

$$\bar{x} = \frac{\sum x}{N} \quad \bar{x} = \frac{1,367,501}{6} \quad \bar{x} = 226,916.83$$

$$D.M. = \frac{\sum (x - \bar{x})}{N} \quad D.M. = \frac{271,248}{6} \quad D.M. = 45,208$$

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} \quad S = \sqrt{\frac{14,333,600,822.80}{6}}$$

$$S = \sqrt{2,388,933,470.46} \quad S = 48,876.72$$

$$R = D_{ma} - D_{me}$$

$$R = 296,499 - 162,812$$

$$R = 133,687$$