PO11Q - Introduction to Quantitative Political Analysis I:
Worksheet Week 4 - Solutions

Dr Florian Reiche
F.Reiche@warwick.ac.uk

1 | Calculations

1.1 Mean

$$\overline{income} = \frac{450 + 550 + 300 + 650 + 100 + 900 + 200 + 250 + 300 + 600}{10} = 430$$

$$\overline{age} = \frac{21 + 23 + 27 + 30 + 20 + 18 + 20 + 22 + 21 + 21}{10} = 22.3$$

1.2 Mode

- Income: 300
- Age: 21

1.3 Median

Income:

$$\frac{300 + 450}{2} = 375$$

Age:

$$\frac{21 + 21}{2} = 21$$

1.4 Range

Income:

$$900 - 100 = 800$$

Age:

$$30 - 18 = 12$$

1.5 Standard Deviation

$$s_{income} = \sqrt{\frac{\Sigma(y_i - \bar{y})^2}{n - 1}} = \sqrt{\frac{(450 - 430)^2 + (550 - 430)^2 + (300 - 430)^2 + (600 - 430)^2}{10 - 1}} = 245.18$$

$$s_{age} = \sqrt{\frac{\Sigma(y_i - \bar{y})^2}{n - 1}} = \sqrt{\frac{(21 - 22.3)^2 + (23 - 22.3)^2 + (27 - 22.3)^2 + (21 - 22.3)^2}{10 - 1}} = 3.59$$

1.6 Variance

$$s^2_{income} = 60111.11$$

$$s^2_{age} = 12.9$$