

EXERCISE 1

a. $Q = \frac{Q_3 - Q_1}{2} = \frac{14 - 6}{2} = \frac{8}{2} = 4$

b. $VC = \frac{S}{\bar{x}} \cdot 100 = \frac{4.45}{10} \cdot 100 = 44.5$

c. $A = 0$ Data are symmetric.

d. $k = -0.784 < 0 \rightarrow$ Data are platykurtic

| | | |
|----|----|----|
| 14 | 10 | 10 |
| 10 | 10 | 10 |
| 6 | 10 | 10 |



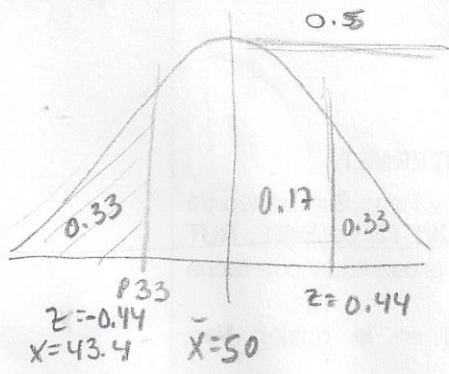
Exercise 1: The table below reports the relationship between gender and a number of observations per

| | | | |
|--------------|-------|--------|-------|
| Gender | Male | Female | Total |
| Observations | 50 | 30 | 80 |
| Percentage | 62.5% | 37.5% | 100% |

Exercise 2: The table below reports the relationship between gender and a number of observations per

| | | | |
|--------------|-------|--------|-------|
| Gender | Male | Female | Total |
| Observations | 50 | 30 | 80 |
| Percentage | 62.5% | 37.5% | 100% |

EXERCISE 2



$$z = \frac{X - \bar{X}}{S} \rightarrow -0.44 = \frac{X - 50}{15}$$

$$-0.44 \cdot 15 = X - 50$$

$$-6.6 = X - 50$$

$$\boxed{43.4 = X}$$

$$S = 15$$

DESIGN AND DATA ANALYSIS IN PSYCHOLOGY 1

PARTIAL 1

EXERCISE 3

| x | x_i | f_i | $f_i x_i$ | F_i |
|-------------------------|-------|-------|-----------|-------|
| 10-14 | 12 | 3 | 36 | 3 |
| Mdn → 15-19 | 17 | 30 | 510 | 33 |
| P ₇₇ → 20-24 | 22 | 15 | 330 | 48 |
| 25-29 | 27 | 0 | 0 | 48 |
| 30-34 | 32 | 1 | 32 | 49 |
| 35-39 | 37 | 0 | 0 | 49 |
| 40-44 | 42 | 1 | 42 | 50 |
| | | 50 | 950 | |

$$a) \bar{x} = \frac{\sum f_i x_i}{n} = \frac{950}{50} = 19$$

$$b) \text{Mdn} = L_i + \frac{1}{f_i} \left(\frac{n}{2} - F_i \right) = 14.5 + \frac{5}{30} (25 - 3) = 14.5 + 3.67 = 18.17$$

$$\frac{n}{2} = \frac{50}{2} = 25$$

$$l = \text{Exact upper limit} - \text{exact lower limit} = 19.5 - 14.5 = 5$$

$$c) P_{77} = L_i + \frac{1}{f_i} \left(\frac{l \cdot n}{k} - F_i \right) = 19.5 + \frac{5}{15} (38.5 - 33) = 19.5 + 1.83 = 21.33$$

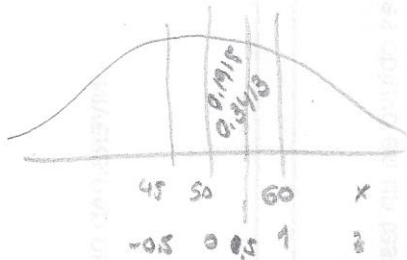
$$\frac{l \cdot n}{k} = \frac{77 \cdot 50}{100} = 38.5$$

EXERCISE 4

$\bar{X} = 50$

$S^2 = 100 \rightarrow S = \sqrt{100} = 10$

a)



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

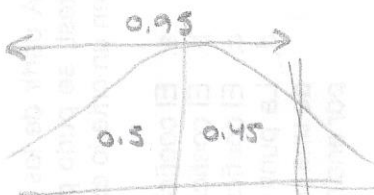
$z = \frac{x - \bar{X}}{S}$

$z = \frac{60 - 50}{10} = 1$

$z = \frac{45 - 50}{10} = \frac{-5}{10} = -0.5$

$P = 0.3413 + 0.1915 = 0.5328$

b)



$z = 1.64$

← Obtained from the standard normal distribution table