

Worksheet 2015-8EJ-00004(1)

(1) Determine the median and mode of each of the following sets of data:

- (a) 23 ; 24 ; 25 ; $\overbrace{26 ; 26 ; 26}^m$; 27 ; 28

Mode $\rightarrow 26$

Median $\rightarrow \frac{26+26}{2} = 26$

- (b) $\checkmark$ 102 ; $\checkmark$ 99 ; $\checkmark$ 112 ; $\checkmark$ 133 ; $\checkmark$ 91 ; $\checkmark$ 84 ; $\checkmark$ 113 ; $\checkmark$ 112 ; $\checkmark$ 81 ; $\checkmark$ 101

81 ; 84 ; 91 ; 99 ; $\overbrace{101 ; 102}^m$; 112 ; 112 ; 113 ; 133

Mode = 112

Median = $\frac{101+102}{2} = 101,5$

- (c) $\checkmark$ 5,4 ; $\checkmark$ 3,4 ; $\checkmark$ 2,8 ; $\checkmark$ 3,9 ; $\checkmark$ 3,3 ; $\checkmark$ 6,4 ; $\checkmark$ 7,2

2,8 ; 3,3 ; 3,4 ; $\overbrace{3,9}^m$; 5,4 ; 6,4 ; 7,2

Mode $\rightarrow$ None

Median = 3,9

(2) (a) Present the following as a stem-and-leaf diagram:

The number of CD's sold for the month of May at the different agencies

1 254 $\checkmark$ 1 546 $\checkmark$ 1 346 $\checkmark$ 1 438 $\checkmark$ 1 754 $\checkmark$ 1 765 $\checkmark$ 1 129 $\checkmark$ 1 370 $\checkmark$
 1 321 $\checkmark$ 1 342 $\checkmark$ 1 745 $\checkmark$ 1 745 $\checkmark$ 1 843 $\checkmark$ 1 538 $\checkmark$ 1 691 $\checkmark$ 1 624 $\checkmark$
 1 629 $\checkmark$ 1 008 $\checkmark$ 1 243 $\checkmark$ 1 566 $\checkmark$ 1 023 $\checkmark$ 1 287 $\checkmark$ 1 569 $\checkmark$ 1 712 $\checkmark$
 1 198 $\checkmark$ 1 561 $\checkmark$

Stem:	Leaf:	Frequency:
10	08 23	2
11	29 98	2
12	43 54 87	3
13	21 42 46 70	4
14	38	1
15	(38) (46) 61 66 69	5
16	24 29 91	3
17	12 <u>45</u> <u>45</u> 54 65	5
18	43	1

Key: 18/43 = 1 843

(26)

(b) Determine the median and mode of the data in (a).

$$\text{Mode} = 1745$$

$$\text{Median} = \frac{1538 + 1546}{2} = \frac{3084}{2} = 1542$$

(c) Determine the average number of CD's sold per month by the agencies.

$$\text{Mean} = \frac{38\,247}{26} \leftarrow$$

$$= 1471.03...$$

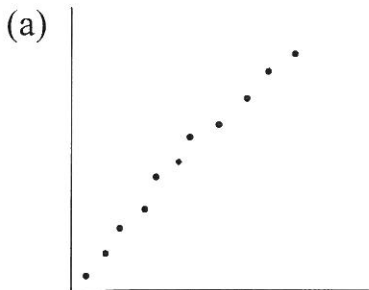
$$\approx 1471$$

(d) How many more CD's should have been sold by the agencies in total for the month of May if the average number of CD's sold must be exactly 1500.

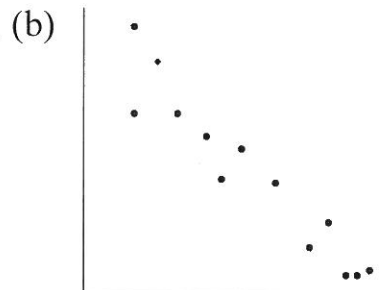
$$1500 \times 26 = 39000$$

$$\therefore 39000 - 38\,247 = 753 \text{ CD's more!}$$

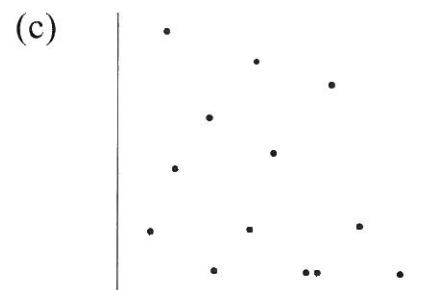
(3) Consider the following scatter graphs and describe the distribution in full:



linear
positive



linear
negative



No
correlation

(4) Calculate the mean of:

(a) 333 ; 234 ; 112 ; 256 ; 111 ; 234 ; 432 ; 482 ; 582 ; 108 ; 285

$$\text{Mean} = \frac{3169}{11}$$

$$= 288.09...$$

$$\approx 288.1$$

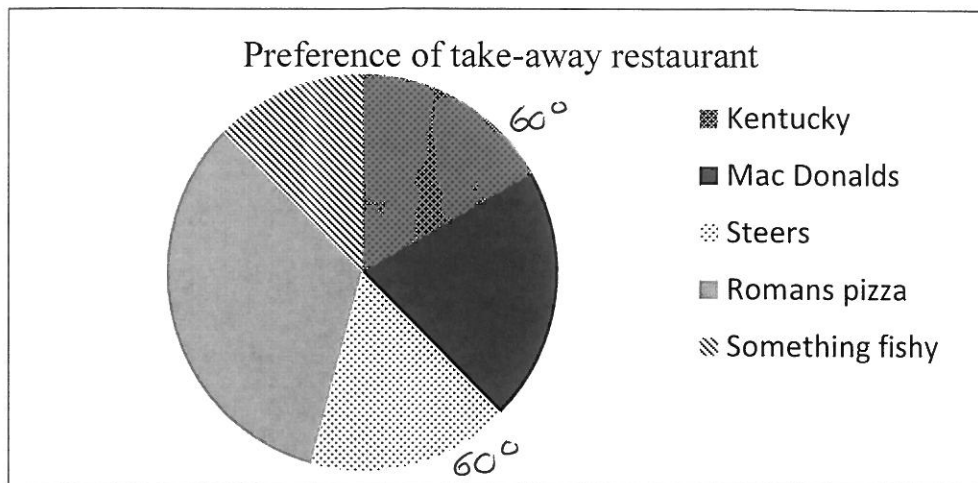
(b) 15,4 ; 90,1 ; 30,6 ; 99,3 ; 34,7 ; 21,8 ; 45,7 ; 39,8 ; 79,5 ; 49,0

$$\text{Mean} = \frac{505,9}{10}$$

$$= 50,59$$

$$\approx 50,6$$

(5) Consider the pie chart and answer the questions:



(a) Describe the purpose of the pie chart.

(b) Which restaurant is the most popular?

(c) If 120 respondents participated in the survey, calculate the number of respondents who indicated Kentucky as the preferred restaurant?

(d) Which percentage of the respondents have indicated Steers as preferred restaurant?

(a) To determine the preferable take-away restaurant.

(b) Romans pizza

(c) Kentucky : $\frac{60^\circ}{360^\circ} \times \frac{120}{1} = 20$ respondents
(Measure the Kentucky sector with a protractor.)

(d) Steers : $\frac{60^\circ}{360^\circ} \times \frac{100}{1} = 17\%$