

# DATA HANDLING TEST



Grade 10

Mathematics

Marks: 40

Time: 50 Minutes

Name: MEMORANDUM

## QUESTION 1

Consider the data set below:

27	32	37	41	41	53	58	59	67	71	73	77	93	97	99
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1.1 Determine the mean to the nearest integer.

(2) S1801

$$\begin{aligned}\bar{x} &= \frac{925}{15} \checkmark \\ &= 62 \checkmark\end{aligned}$$

1.2 Determine the median.

(1) S1801

$$\text{median} = 59 \checkmark$$

1.3 Determine the mode.

(1) S1801

$$\text{mode} = 41 \checkmark$$

1.4 Write down the Five number summary.

(5) S1805

$$\begin{aligned}\text{min} &= 27 \checkmark \\ Q_1 &= 41 \checkmark \\ Q_2 &= 59 \checkmark \\ Q_3 &= 77 \checkmark \\ \text{max} &= 99 \checkmark\end{aligned}$$

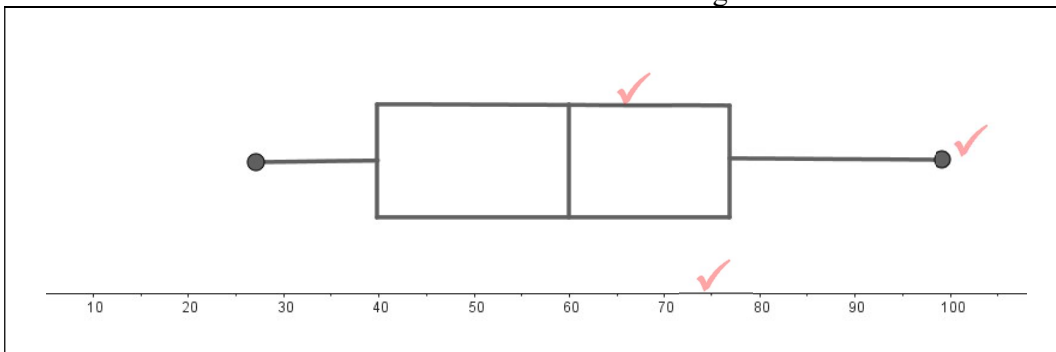
1.5 Calculate the interquartile range.

(2) S1805

$$\begin{aligned}\text{IQR} &= Q_3 - Q_1 \\ &= 77 - 41 = 36 \checkmark\end{aligned}$$

1.6 Use the above information to draw a box-and-whisker diagram.

(3) S1806



**QUESTION 2**

The number of burgers that a tuck shop sells over a period of 70 days are given in the table below:

<b>Amount</b>	$0 < x \leq 10$	$10 < x \leq 20$	$20 < x \leq 30$	$30 < x \leq 40$	$40 < x \leq 50$
<b>Frequency</b>	7	15	21	19	8

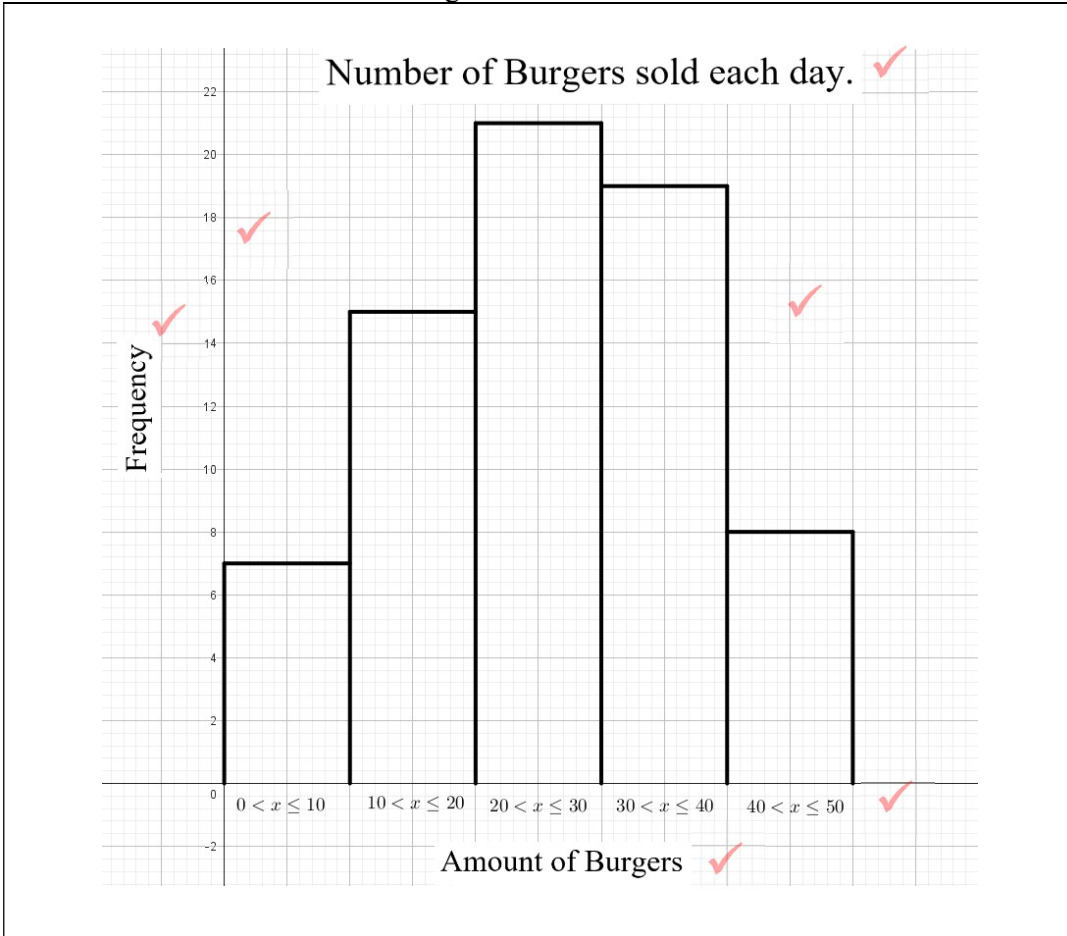
2.1 Complete the frequency table below (a to t):

(8) S1804

Amount of burgers (x)	(a) <i>Midpoint (X)</i> ✓	(b) <i>frequency (f)</i> ✓	(c) <i>f × X</i> ✓
$0 < x \leq 10$	(d) 5	(i) 7	(n) 35
$10 < x \leq 20$	(e) 15	(j) 15	(o) 225
$20 < x \leq 30$	(f) 25 ✓	(k) 21 ✓	(p) 525 ✓
$30 < x \leq 40$	(g) 35	(l) 19	(q) 665
$40 < x \leq 50$	(h) 45	(m) 8	(r) 360
		(s) $n = 70$ ✓	(t) $\Sigma fx = 1810$ ✓

2.2 Use the above table to draw a Histogram

(6) S1804



### QUESTION 3

The data below represents the number of customers visiting different retail shops in a mall on a specific day.

113	113	117	118	121	123	133	141	143	147
147	161	163	167	173	181	187	189	197	199

3.1 Complete the stem-and-leaf diagram below:

(6) S1803

<i>stem</i> ✓	<i>leaf</i> ✓
11	3 3 7 8
12	1 3 ✓
13	3
14	1 3 7 7
15	✓
16	1 3 7
17	3
18	1 7 9 ✓
19	7 9
<i>KEY</i> : 121 = 12 1 ✓	

3.2 Calculate the 43<sup>rd</sup> percentile.

(3) S1807

$$\begin{aligned} \text{Pos of } P_{43} &= \frac{43}{100} \times 20 \quad \checkmark \\ &= 8,7 \\ &\approx 9 \quad \checkmark \end{aligned}$$

$$P_{43} = 143 \quad \checkmark$$

3.3 Calculate the 4<sup>th</sup> decile.

(3) S1807

$$\begin{aligned} \text{Pos of } D_4 &= \frac{4}{10} \times 20 \quad \checkmark \\ &= 8 \quad \checkmark \end{aligned}$$

$$D_4 = 141 \quad \checkmark$$

[12]

Total: 40 Marks