2.7-3 Averages and Data Handling: Practice Set 3: 30-minute Pack

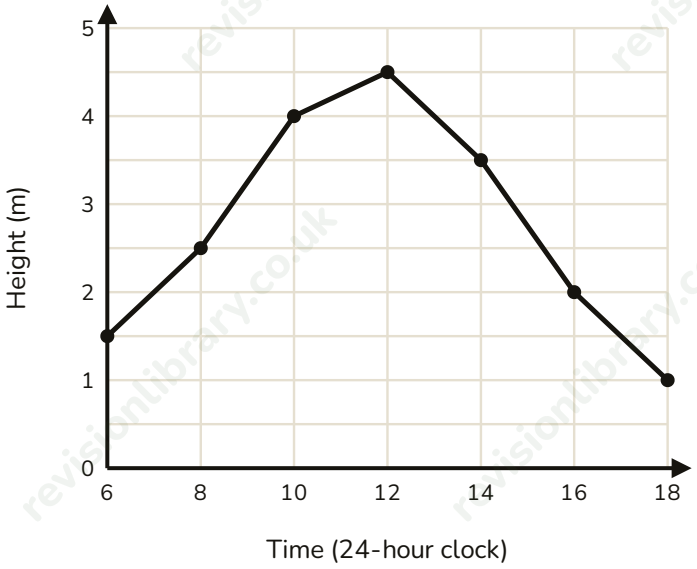
Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The line graph shows the height of the tide, in metres, at Bramsea Harbour, recorded every 2 hours during one day: 06:00 1.5 m, 08:00 2.5 m, 10:00 4.0 m, 12:00 4.5 m, 14:00 3.5 m, 16:00 2.0 m, 18:00 1.0 m.



(a) What was the height of the tide at 12:00? **(1)**

(b) Work out the difference in tide height between 06:00 and 12:00. **(2)**

.....

(c) Between which two consecutive readings shown did the tide fall the most? **(1)**

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2 The table shows the number of correct answers, out of 4, that each pupil in a class of 20 got in a times-tables quiz. Correct answers (x): 0, 1, 2, 3, 4. Number of pupils (f): 3, 4, 6, 4, 3.

(a) What is the modal number of correct answers? **(1)**

(b) Work out the mean number of correct answers per pupil. **(3)**

3 A drawer contains 4 black socks and 6 white socks, all mixed up. Declan takes one sock out at random and does not put it back.
Given that the first sock he took was black, what is the probability that the second sock he takes is also black?

(2)

4 In a PE lesson, five pupils recorded their long jump distances, in centimetres: 142, 118, 156, 131, 127.
What is the range of these distances?
A) 24 cm B) 29 cm C) 38 cm D) 45 cm

(1)

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5 The stem-and-leaf diagram shows the times, in seconds, taken by a group of pupils to complete an obstacle course. Stem 2: leaves 4, 7, 8. Stem 3: leaves 0, 2, 2, 5, 9. Stem 4: leaves 1, 3, 6. Stem 5: leaves 0, 2. Key: 2 | 4 means 24 seconds.

Stem	Leaf
2	4 7 8
3	0 2 2 5 9
4	1 3 6
5	0 2

(a) How many pupils are represented in the diagram? **(1)**

(b) Find the range of the times. **(2)**

.....

6 The mean height of 8 pupils in a running club is 142 cm. A new pupil joins the club, and the mean height of all 9 pupils becomes 143 cm.
What is the height of the new pupil?

(4)

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7 A school canteen recorded the number of hot lunches and packed lunches eaten by pupils over one week. Monday: hot 62, packed 38. Tuesday: hot 58, packed 42. Wednesday: hot 65, packed 35. Thursday: hot 60, packed 40. Friday: hot 45, packed 55.
On which day was the difference between the number of hot lunches and packed lunches the greatest, and what was that difference?

(3)

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8 Two weeks of absence data were recorded for a class. Week 1: Monday 4, Tuesday 2, Wednesday 6, Thursday 3, Friday 5. Week 2: Monday 3, Tuesday 5, Wednesday 4, Thursday 6, Friday 2.
What is the difference between the mean number of absences in Week 1 and the mean number of absences in Week 2?
A) 0 B) 1 C) 2 D) 4

(1)

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9 Seven pupils threw a bean bag in a PE lesson. Here are the distances they threw it, in metres: 2.5, 4.0, 1.5, 5.5, 3.0, 1.0, 4.5.
Find the median distance thrown.

(2)

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10 During a class nature walk, pupils kept a pictogram of how many birds they spotted each day. Key: one full bird symbol = 4 birds, and a half symbol = 2 birds. The pictogram showed: Monday 3 symbols and a half, Tuesday 2 symbols, Wednesday 4 symbols and a half, Thursday 1 symbol and a half.

(a) How many birds were spotted on Monday? **(1)**

.....

(b) How many more birds were spotted on Wednesday than on Thursday? **(2)**

.....

(c) Which day had the fewest birds spotted? **(1)**
A) Monday B) Tuesday C) Wednesday D) Thursday

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11 The table shows the number of hours of screen time (TV, tablet or phone) that each pupil in a class of 25 had yesterday. Hours of screen time (x): 0, 1, 2, 3, 4. Number of pupils (f): 4, 8, 7, 4, 2.

(a) What is the modal number of hours of screen time? **(1)**

(b) How many pupils had exactly 2 hours of screen time? **(1)**

(c) How many pupils had 2 hours or more of screen time? **(2)**

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12 A fair six-sided dice is rolled once.
What is the probability of rolling a number greater than 4?
A) 1/6 B) 1/3 C) 1/2 D) 2/3

(1)

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Mark scheme · 2.7-3 Averages and Data Handling: Practice Set 3: 30-minute Pack

Question 1

(a) 4.5 m cao **B1**

(a) Answer: 4.5 m

(b) 4.5 - 1.5 (or both values correctly identified) **M1**

(b) 3.0 m cao **A1**

(b) Answer: 3.0 m

(c) 14:00 and 16:00 (a fall of 1.5 m) oe **B1**

(c) Answer: Between 14:00 and 16:00

Question 2

(a) 2 cao **B1**

(a) Answer: 2

(b) at least three correct products found: 0x3=0, 1x4=4, 2x6=12, 3x4=12, 4x3=12 **M1**

(b) 40 (sum of all five products) **M1**

(b) 2 cao (accept 40 / 20) **A1**

(b) Answer: 2

Question 3

3 black socks and 9 socks remaining correctly identified **M1**

1/3 oe cao **A1**

Answer: 1/3

Question 4

38 cm cao **B1**

Answer: C) 38 cm

Question 5

(a) 13 cao **B1**

(a) Answer: 13

(b) 52 and 24 correctly identified as largest and smallest values **M1**

(b) 28 seconds cao **A1**

(b) Answer: 28 seconds

Question 6

142 x 8 = 1136 **M1**

143 x 9 = 1287 **M1**

correct subtraction method, 1287 - 1136 **M1**

151 cm cao **A1**

Answer: 151 cm

Question 7

at least three correct daily differences found: Mon 24, Tue 16, Wed 30, Thu 20, Fri 10 **M1**

Wednesday correctly identified as the greatest difference **M1**

30 cao **A1**

Answer: Wednesday, with a difference of 30

Question 8

A) 0 cao **B1**

Answer: A) 0

Question 9

correctly orders the seven values: 1.0, 1.5, 2.5, 3.0, 4.0, 4.5, 5.5 **M1**

3.0 m oe cao **A1**

Answer: 3.0 m

Question 10

(a) 14 cao **B1**

(a) Answer: 14

(b) Wednesday = 18 and Thursday = 6 (or correct method shown) **M1**

(b) 12 cao **A1**

(b) Answer: 12

(c) D (Thursday) cao **B1**

(c) Answer: D) Thursday

Question 11

(a) 1 hour cao **B1**

(a) Answer: 1 hour

(b) 7 cao **B1**

(b) Answer: 7

(c) 7 + 4 + 2 (or equivalent correct method) **M1**

(c) 13 cao **A1**

(c) Answer: 13

Question 12

1/3 oe cao **B1**

Answer: B) 1/3

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