# KS2.M-Y5S1 Statistics: Line Graphs and Timetables

Calculators not allowed · about 45 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

**Answer ALL questions. Show all your working.**

**1** A line graph shows the number of visitors to a school garden at each hour from 9:00 to 3:00. At 9:00 there were 12 visitors, at 10:00 there were 18, at 11:00 there were 25, at 12:00 there were 22, at 1:00 there were 30, at 2:00 there were 28, and at 3:00 there were 20. Use the graph data to answer the question.

Between which two consecutive hours did the number of visitors increase by the greatest amount?

(2)

**2** The school bus timetable shows departure times from Willow Stop: 08:05, 08:20, 08:35, 08:50, 09:05. A pupil arrives at Willow Stop at 08:27. Which bus will they catch?

(2)

**3** A line graph records the temperature at 6 times during a day: 6:00 9 degrees, 9:00 12 degrees, 12:00 18 degrees, 15:00 20 degrees, 18:00 15 degrees, 21:00 10 degrees. What is the range of temperatures shown on the graph?

(2)

**4** A train timetable shows the following arrival times at Oakley: 10:12, 11:00, 11:48, 12:36. How many minutes are there between the 11:00 and the 11:48 arrival?

(2)

**5** A line graph shows the number of apples picked from an orchard each day for a week: Mon 24, Tue 30, Wed 27, Thu 33, Fri 30, Sat 18, Sun 15. On which day was the number picked equal to the mode of the week?

**(2)**

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**6** A ferry timetable shows departures from Harbour A to Harbour B at 09:10, 11:40, 14:10 and 16:40. The crossing takes 55 minutes. If a passenger catches the 11:40 ferry, at what time will they arrive at Harbour B?

**(2)**

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**7** A line graph shows the number of pages pupils read each day: Monday 15, Tuesday 18, Wednesday 27, Thursday 24, Friday 21. How many more pages were read on Wednesday than on Monday?

**(2)**

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**8** A school timetable shows lunchtime is from 12:15 to 13:00. How many minutes long is lunchtime?

**(2)**

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**9** A line graph shows the height of water in a tank measured every hour: 8:00 40 cm, 9:00 55 cm, 10:00 70 cm, 11:00 65 cm, 12:00 80 cm. Between which two hours did the water fall?

**(2)**

**10** The timetable for a school trip shows coaches leave at 09:30 and travel time is 1 hour 45 minutes. The group will have a 30 minute picnic after arrival and then visit a museum for 2 hours. At what time will the museum visit finish?

**(2)**

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**11** A line graph shows sales of hot chocolates at a cafe each day: Mon 14, Tue 16, Wed 16, Thu 20, Fri 22. What is the median number of hot chocolates sold?

**(2)**

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**12** A bus leaves Central Station at 07:55 and arrives at Parkside at 08:28. Later the bus leaves Parkside at 17:20 and arrives back at Central Station at 17:58. Which journey took longer and by how many minutes?

**(2)**

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**13** A line graph shows the number of bicycles borrowed from a library each hour: 9:00 3, 10:00 7, 11:00 12, 12:00 12, 13:00 9. A pupil says: "Between 11:00 and 12:00 the number did not change." Explain whether the pupil is correct.

**(2)**

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**14** A train timetable shows local trains leave at 08:15, 09:45, 11:15, 12:45 (journey time 40 minutes) and express trains leave at 08:05, 10:05, 12:05 (journey time 25 minutes). A passenger wants to travel after 09:00 and arrive as early as possible. Which train should they take and why?

**(2)**

**15** A line graph shows ice-cream sales by hour: 10:00 5, 11:00 8, 12:00 14, 13:00 18, 14:00 16. What is the average (mean) number of ice-creams sold per hour over these five hours? Give your answer to 1 decimal place.

**(2)**

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**16** A ferry timetable shows crossings start at 06:30 and then every 50 minutes until 10:30 inclusive. List all the departure times.

**(2)**

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**17** A line graph records the number of steps a pupil walked each day: Monday 4,200, Tuesday 5,100, Wednesday 4,800, Thursday 5,400, Friday 4,500. Which day is closest to the weekly mean? Show working.

**(2)**

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**18** A line graph shows the number of visitors to three exhibitions each day. On a certain day Exhibition A had 120 visitors, Exhibition B had 95 and Exhibition C had 85. A pupil claims: "Exhibition A had more visitors than B and C combined." Explain whether the pupil is correct.

**(2)**

# Mark scheme · KS2.M-Y5S1 Statistics: Line Graphs and Timetables

### Question 1

- **B1** Identifies the correct hour interval 12:00 to 1:00
- **B1** Gives reason or difference 8 cao
- Answer: **12:00 to 1:00 (increase of 8)**

### Question 2

- **B1** Identifies the 08:35 bus as the correct bus
- **B1** Clear statement 08:35 cao
- Answer: **08:35**

### Question 3

- **M1** Finds highest and lowest temperatures or calculates 20 - 9
- **B1** 11 cao
- Answer: **11 degrees Celsius**

### Question 4

- **M1** Calculates time difference 48 - 00 or 11:48 - 11:00
- **B1** 48 cao
- Answer: **48 minutes**

### Question 5

- **M1** Identifies the modal value 30
- **B1** Gives a day with 30, Tue or Fri cao
- Answer: **Tuesday or Friday**

### Question 6

- **M1** Adds 55 minutes correctly to 11:40
- **B1** 12:35 cao
- Answer: **12:35**

### Question 7

- **M1** Subtracts 15 from 27 or shows difference
- **B1** 12 cao
- Answer: **12 pages**

### Question 8

- **M1** Subtracts times 13:00 - 12:15 or 60 - 15
- **B1** 45 cao
- Answer: **45 minutes**

### Question 9

- **B1** Identifies 10:00 to 11:00 as the interval where height fell
- **B1** States 10:00 to 11:00 cao
- Answer: **10:00 to 11:00**

### Question 10

- **M1** Adds travel 1:45 to 09:30 to get arrival 11:15 and adds picnic 0:30 and museum 2:00 correctly
- **B1** 13:45 cao
- Answer: **13:45**

### Question 11

- **M1** Orders the data and finds the middle value
- **B1** 16 cao
- Answer: **16**

### Question 12

- **M1** Finds both journey times: 33 minutes and 38 minutes
- **B1** States return journey longer by 5 minutes cao
- Answer: **Return journey by 5 minutes**

### Question 13

- **M1** Notes numbers at 11:00 and 12:00 are both 12 or states same value
- **B1** Concludes pupil is correct with clear justification cao
- Answer: **The pupil is correct because the graph shows 12 at both 11:00 and 12:00, so the number did not change.**

### Question 14

- **M1** Identifies next departures after 09:00: 09:45 local and 10:05 express, and works out arrival times: 09:45 + 40 min = 10:25 local, 10:05 + 25 min = 10:30 express
- **B1** Chooses 09:45 local train because it arrives at 10:25, earlier than the express arriving at 10:30 cao
- Answer: **Take the 09:45 local train. It arrives at 10:25, five minutes before the 10:05 express (which takes 25 minutes and arrives at 10:30).**

### Question 15

- **M1** Adds values correctly to get total 61 and divides by 5
- **B1** 12.2 cao
- Answer: **12.2**

### Question 16

- **M1** Generates sequence adding 50 minutes repeatedly
- **B1** Gives list 06:30, 07:20, 08:10, 09:00, 09:50 (the next departure, 10:40, would exceed 10:30)
- Answer: **06:30, 07:20, 08:10, 09:00, 09:50**

### Question 17

- **M1** Calculates mean: total 24,000 ÷ 5 = 4,800
- **B1** Chooses Wednesday 4,800 as closest (difference 0) cao
- Answer: **Wednesday (4,800)**

### Question 18

- **M1** Adds B and C correctly: 95 + 85 = 180
- **B1** Concludes pupil is incorrect because 120 < 180 cao
- Answer: **The pupil is incorrect because B and C together have 95 + 85 = 180 visitors, which is more than A's 120.**