6.3 Bar Charts, Pictograms and Line Graphs: Test Pack

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A class counts the colours of 30 pencils. The results are: red 8, blue 7, green 9, yellow 6. Draw a vertical bar chart to show this data. Label the axes and give a suitable scale.

(2)

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2 A bar chart shows the number of pupils in a class who own each type of pet: dogs 25, cats 4, fish 3, rabbits 30, hamsters 28.
How many more pupils own rabbits than hamsters?

(2)

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3 A bar chart shows the number of pupils in a class who own each type of pet: dogs 22, cats 17, fish 16, rabbits 15, hamsters 30.
Work out the total number of pets owned.

(2)

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4 A pictogram uses a symbol representing 5 sweets. If a row shows 2 and 3/5 symbols, how many sweets does this represent?

(2)

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5 Two bar charts compare rainfall (mm) in April and May for a town: April - Week 1 12, Week 2 8, Week 3 20, Week 4 10; May - Week 1 15, Week 2 18, Week 3 9, Week 4 22. Which week had the greatest combined rainfall (April + May), and what was the combined total for that week?

(3)

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6 A line graph shows a car's fuel level (litres) during a journey: at 0 km the fuel is 40 litres, and at 100 km the fuel is 25 litres. Assuming the graph is a straight line, estimate the fuel level after 60 km.

(3)

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7 A pictogram uses one symbol to represent 3 pets. Draw a pictogram for 9 dogs, 6 cats and 3 rabbits using that symbol. How many symbols do you draw for each pet type?

(2)

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8 A pictogram uses one symbol to represent 10 bottles of water sold. The pictogram shows: Monday 1.5 symbols; Tuesday 4.5 symbols; Wednesday 5 symbols; Thursday 6.5 symbols.
How many bottles were sold on Monday?

(1)

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9 Here is a small table of daily visitors to a farm shop over 4 days: Monday 24, Tuesday 30, Wednesday 18, Thursday 28. Complete the table by adding a column that shows the same data on a scale where 1 square = 6 visitors (for a pictogram). How many squares for each day?

(2)

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10 A pictogram uses one symbol to represent 4 bottles of water sold. The pictogram shows: Monday 6.5 symbols; Tuesday 5.5 symbols; Wednesday 3.5 symbols; Thursday 6.5 symbols.
How many bottles were sold on Monday?

(1)

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11 A pictogram uses one symbol to represent 20 bottles of water sold. The pictogram shows: Monday 6 symbols; Tuesday 4.5 symbols; Wednesday 6 symbols; Thursday 5.5 symbols.
How many more bottles were sold on Thursday than on Tuesday?

(2)

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12 A line graph shows temperature at times during a day. At 6:00 the temperature is 8°C, at 12:00 it is 15°C, and at 18:00 it is 10°C. Plot these points and join them with straight lines. What is the temperature at 9:00 if the graph shows a straight line between 6:00 and 12:00?

(2)

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13 A pictogram uses one symbol to represent 20 bottles of water sold. The pictogram shows: Monday 4 symbols; Tuesday 6 symbols; Wednesday 6 symbols; Thursday 1.5 symbols.
Work out the total number of bottles sold on the four days.

(2)

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14 The bar chart shows how many books each pupil read in a month: Alice 5, Ben 2, Cara 4, David 3. Which pupil read the most books and how many more did they read than the pupil who read the fewest?

(2)

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15 A bar chart shows the number of pupils in a class who own each type of pet: dogs 9, cats 30, fish 24, rabbits 4, hamsters 15.
Work out the mean number of pupils per pet type.

(3)

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16 A pictogram uses one symbol to represent 2 bottles of water sold. The pictogram shows: Monday 1.5 symbols; Tuesday 5.5 symbols; Wednesday 5.5 symbols; Thursday 4.5 symbols.
How many bottles were sold on Monday?

(1)

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17 A bar chart shows the number of pupils in a class who own each type of pet: dogs 8, cats 17, fish 21, rabbits 9, hamsters 29.
Which type of pet is the mode, and what fraction of all the pets is it? Give the fraction in its simplest form.

(2)

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18 The horizontal bar chart below shows the time (minutes) students spent reading each week: Emma 90, Faisal 60, Grace 120, Harry 30. Which student spent twice as long as Faisal reading?

(2)

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19 A pictogram uses one symbol to represent 20 bottles of water sold. The pictogram shows: Monday 4 symbols; Tuesday 5.5 symbols; Wednesday 1.5 symbols; Thursday 3 symbols.
How many more bottles were sold on Tuesday than on Thursday?

(2)

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20 A bar chart shows the number of pupils in a class who own each type of pet: dogs 4, cats 12, fish 28, rabbits 6, hamsters 6.
Work out the mean number of pupils per pet type.

(3)

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21 A bar chart shows how many minutes 5 friends spent on homework: Priya 45, Sam 30, Jodie 60, Tom 15, Zara 50. Work out the total number of minutes spent on homework by all five friends.

(2)

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22 A line graph shows the temperature in a greenhouse: 7:00 5°C, 9:00 6°C, 11:00 3°C, 13:00 0°C, 15:00 -1°C.
At what time was the temperature highest, and what was the highest temperature?

(2)

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Mark scheme · 6.3 Bar Charts, Pictograms and Line Graphs: Test Pack

Question 1

vertical bars drawn with correct heights for all four categories (heights 8, 7, 9, 6) and bars labelled — **M1**

axes labelled and a sensible scale shown (e.g. 0 to 10 with ticks at 1 or 2) cao — **A1**

Answer: **Bar chart with bars heights 8,7,9,6; axes labelled; scale 0 to 10 with ticks**

Question 2

30 - 28 (or the reverse) — **M1**

2 cao — **A1**

Answer: **2**

Question 3

adds the five values — **M1**

100 cao — **A1**

Answer: **100**

Question 4

method: 2.6 x 5 or equivalent shown — **M1**

13 sweets cao — **A1**

Answer: **13 sweets**

Question 5

method: adds April and May for each week (27, 26, 29, 32) — **M1**

identifies Week 4 as the greatest combined total — **M1**

32 mm cao — **A1**

Answer: **Week 4; 32 mm**

Question 6

method: fuel used = 15 litres over 100 km = 0.15 litres per km — **M1**

method: 40 - (0.15 x 60) shown — **M1**

31 litres cao — **A1**

Answer: **31 litres**

Question 7

correct number of symbols shown for each type: dogs 3, cats 2, rabbits 1 — **M1**

symbols drawn or numbers stated clearly cao — **A1**

Answer: **Dogs 3 symbols, Cats 2 symbols, Rabbits 1 symbol**

Question 8

15 cao — **B1**

Answer: **15**

Question 9

correct conversion to squares: 24 -> 4, 30 -> 5, 18 -> 3, 28 -> 4 2/3 — **M1**

clear counts given as 4, 5, 3 and 4 2/3 (4 whole squares and 2/3 of a square) cao — **A1**

Answer: **Monday 4, Tuesday 5, Wednesday 3, Thursday 4 2/3 (4 whole squares and 2/3 of a square)**

Question 10

26 cao — **B1**

Answer: **26**

Question 11

subtracts the two values — **M1**

20 cao — **A1**

Answer: **20**

Question 12

correct plotting of given points and indication of straight line between 6:00 and 12:00 — **M1**

temperature at 9:00 = 11.5°C cao — **A1**

Answer: **11.5°C**

Question 13

adds the symbols or the values — **M1**

350 cao — **A1**

Answer: **350**

Question 14

identifies Alice as having the most with 5 books — **M1**

difference 3 (5 - 2) cao — **A1**

Answer: **Alice read the most with 5 books; 3 more than Ben**

Question 15

adds the five values — **M1**

82 ÷ 5 — **M1**

16.4 cao — **A1**

Answer: **16.4**

Question 16

3 cao — **B1**

Answer: **3**

Question 17

mode = hamsters — **B1**

29/84 — **B1**

Answer: **hamsters, 29/84**

Question 18

method shown or stated: Faisal 60 x 2 = 120 or equivalent calculation — **M1**

identifies Grace as twice as long as Faisal (Grace 120 minutes) cao — **A1**

Answer: **Grace**

Question 19

subtracts the two values — **M1**

50 cao — **A1**

Answer: **50**

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Question 20

adds the five values	**M1**
56 ÷ 5	**M1**
11.2 cao	**A1**

Answer: **11.2**

Question 21

method: 45 + 30 + 60 + 15 + 50 shown	**M1**
200 minutes cao	**A1**

Answer: **200 minutes**

Question 22

9:00	**B1**
6°C	**B1**

Answer: **9:00, 6°C**

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