Data Handling & Probability: Hard Practice Paper 8 Answers

Q#	Answer	Explanation
1	C	A full circle is 360°, so the beach sector is 150 out of 360 of the whole, which cancels to 5/12. Twelve equal shares of the people would be 720 ÷ 12 = 60 each, so five shares are 60 × 5 = 300 people.
2	B	The 90 people are 90 out of 720 of the whole, and 720 ÷ 90 = 8, so they are one eighth. One eighth of a full turn is 360 ÷ 8 = 45 degrees.
3	B	A sector shows a share, so it must be applied to each school's own total. School A has 90 out of 360, a quarter, giving 300 ÷ 4 = 75 walkers. School B has 72 out of 360, a fifth, giving 500 ÷ 5 = 100 walkers. So School B has more, despite the smaller sector.
4	C	Less than 20 seconds covers the 10-14 group and the 15-19 group, since every time in them is under 20. That gives 5 + 12 = 17 pupils.
5	B	Only the 25-29 group is 25 seconds or more, and it holds 4 pupils out of the 30 who ran. That is 4 out of 30, and dividing both by 2 gives 2/15.
6	D	Two groups are needed here, the 15-19 group and the 20-24 group, because together they cover every time from 15 up to 24 seconds. That gives 12 + 9 = 21 pupils.
7	B	Wednesday had 30 visitors and Thursday had 90, so the ratio is 30 : 90. Dividing both sides by 30 simplifies it to 1 : 3.
8	C	Thursday had 90 visitors against Tuesday's 60, an increase of 90 − 60 = 30. That increase is measured against Tuesday, so it is 30 out of 60, which is a half, or 50%.
9	A	Monday and Wednesday together had 40 + 30 = 70 visitors, and Thursday had 90, which is more. The others fail: Tuesday's 60 is not double Monday's 40, the four days total 220 rather than 200, Wednesday's 30 is three quarters of 40, and Wednesday had fewer than 40.

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10	C	First find what one symbol is worth: 18 ÷ 3 = 6 books. Then 4 symbols are 4 × 6 = 24 books and the half symbol adds 3, giving 24 + 3 = 27 books.
11	A	Team A scored 3 + 4 + 4 + 5 + 9 = 25 and Team B scored 4 + 5 + 5 + 5 + 6 = 25, so both have a mean of 25 ÷ 5 = 5. Team A's range is 9 − 3 = 6 while Team B's is 6 − 4 = 2, so Team B's scores are far more tightly grouped.
12	A	Starting at 90 chops off the bottom of every bar, removing the amount all four shops share. Only the differences are left to fill the height of the chart, so a shop selling a little more than another appears to be selling far more.
13	E	Describing the library as excellent inside the question tells people what answer is wanted, so more of them will agree than really do. A fair question is neutral, such as "Should the library stay open later?", with clear yes and no options.
14	C	Compare the drop across each hour. They are 80 − 65 = 15, then 65 − 60 = 5, then 60 − 30 = 30, then 30 − 25 = 5 litres. The largest fall is 30 litres, between 3pm and 4pm, which is also the steepest part of the line.
15	C	There are 2000 ÷ 50 = 40 groups of fifty items in a day's output, and each group is expected to hold 3 faulty items. So the expected number is 40 × 3 = 120.

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