**Cumulative Frequency**

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| Name : | Class : | Date : |

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| Mark : | /14 | % |

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| **1)** Based on the frequency distribution below, find the cumulative frequency for the class with lower class limit 31   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Ages | 15 - 18 | 19 - 22 | 23 - 26 | 27 - 30 | 31 - 34 | 35 - 38 | | No. of Students | 2 | 2 | 4 | 7 | 4 | 10 | | [1] |
| **2)** 120 students took a test. The scores are summarized in the tables below. Fill in the missing value in the frequency table.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | Score | Frequency | | 100 - 109 | 19 | | 110 - 119 | 17 | | 120 - 129 | 14 | | 130 - 139 |  | | 140 - 149 | 16 | | 150 - 159 | 40 | |  | |  |  | | --- | --- | | Score | Cumulative Freq | | less than 110 | 19 | | less than 120 | 36 | | less than 130 | 50 | | less than 140 | 64 | | less than 150 | 80 | | less than 160 | 120 | | | [1] |
| **3)** The cumulative frequency polygon below shows the height of 20 buildings, measured in metres.  http://www.mathster.com/course/simgs/114535903716_1.png  How many buildings were less than 25 metres tall? | [1] |
| **4)** The cumulative frequency polygon below shows the height of 20 buildings, measured in metres.  http://www.mathster.com/course/simgs/114535903716_2.png  How many buildings were greater than 50 metres tall? | [1] |
| **5)** The cumulative frequency polygon below shows the scores of 20 students in a history test.  http://www.mathster.com/course/simgs/114535903716_3.png  Estimate, using the graph, the number of students scoring less than 41?  (Give your answer to the nearest integer) | [1] |
| **6)** The cumulative frequency polygon below shows the scores of 20 students in a computer test.  http://www.mathster.com/course/simgs/114535903716_4.png  How many students scored more than 30 marks? | [1] |
| **7)** The cumulative frequency polygon below shows the number of minutes that 20 students used a telephone in one day.  http://www.mathster.com/course/simgs/114535903716_5.png  Estimate, using the graph, the median minutes of use?  (Give your answer to the nearest integer) | [1] |
| **8)** The cumulative frequency polygon below shows the number of minutes that 20 students used a laptop in one day.  http://www.mathster.com/course/simgs/114535903716_6.png  Estimate, using the graph, the lower quartile of the minutes of use?  (Give your answer to the nearest integer) | [1] |
| **9)** The cumulative frequency polygon below shows the number of minutes that 20 girls used a computer in one day.  http://www.mathster.com/course/simgs/114535903716_7.png  Estimate, using the graph, the upper quartile of the minutes of use?  (Give your answer to the nearest integer) | [1] |
| **10)** The cumulative frequency polygon below shows the number of minutes that 20 boys used a laptop in one day.  http://www.mathster.com/course/simgs/114535903716_8.png  Estimate, using the graph, the interquartile range of the minutes of use?  (Give your answer to the nearest integer) | [1] |
| **11)** Using the table, complete the cumulative frequency graph showing the heights of 20 waterfalls, measured in metres.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/114535903716_9.png |  | |  |  | | --- | --- | | Height of waterfalls | Cumulative Frequency | | h   30 | 1 | | h   35 | 3 | | h   40 | 5 | | h   45 | 7 | | h   50 | 10 | | h   55 | 15 | | h   60 | 18 | | h   65 | 20 | | | [1] |
| **12)** Complete the table and the cumulative frequency graph showing the heights of 20 fountains, measured in metres.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/114535903716_10.png |  | |  |  |  | | --- | --- | --- | | Height of fountains | Frequency | Cumulative Frequency | | 20   h   25 | 1 |  | | 25   h   30 | 1 |  | | 30   h   35 | 3 |  | | 35   h   40 | 5 |  | | 40   h   45 | 5 |  | | 45   h   50 | 3 |  | | 50   h   55 | 1 |  | | 55   h   60 | 1 |  | | | [1] |
| **13)** The cumulative frequency table below shows the number of minutes that 20 boys used a mobile phone in one day. Using the table complete the cumulative frequency graph and use your graph to estimate the median minutes of use (to the nearest integer).   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/114535903716_11.png |  | |  |  | | --- | --- | | Minutes | Cumulative Frequency | | 20   x   25 | 1 | | 20   x   30 | 3 | | 20   x   35 | 6 | | 20   x   40 | 9 | | 20   x   45 | 13 | | 20   x   50 | 17 | | 20   x   55 | 19 | | 20   x   60 | 20 | | | [1] |
| **14)** The cumulative frequency table below shows the number of minutes that 20 people used a mobile phone in one day. Using the table complete the cumulative frequency graph and use your graph to estimate the interquartile range (to the nearest integer).   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/114535903716_12.png |  | |  |  | | --- | --- | | Minutes | Cumulative Frequency | | 10   x   15 | 1 | | 10   x   20 | 4 | | 10   x   25 | 5 | | 10   x   30 | 6 | | 10   x   35 | 11 | | 10   x   40 | 15 | | 10   x   45 | 17 | | 10   x   50 | 20 | | | [1] |

**Solutions for the assessment Cumulative Frequency**

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| **1)** 19 | **2)** The missing value is 14. |
| **3)** 5 | **4)** 14 |
| **5)** 12 | **6)** 8 |
| **7)** 57 minutes | **8)** 34 minutes |
| **9)** 28 minutes | **10)** 10 minutes |
| **11)**  http://www.mathster.com/course/simgs/114535903716_13.png | |
| **12)** Cumulative Frequencies are 1, 2, 5, 10, 15, 18, 19, 20. http://www.mathster.com/course/simgs/114535903716_14.png | |
| **13)** Median = 42 minutes http://www.mathster.com/course/simgs/114535903716_15.png | |
| **14)** IQR = 15 minutes http://www.mathster.com/course/simgs/114535903716_16.png | |