**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

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| 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.

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| Score | Frequency |
| 100 - 109 | 19 |
| 110 - 119 | 17 |
| 120 - 129 | 14 |
| 130 - 139 |  |
| 140 - 149 | 16 |
| 150 - 159 | 40 |

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| --- | --- |
| 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 |

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 | [1]   |
| **3)** The cumulative frequency polygon below shows the height of 20 buildings, measured in metres.http://www.mathster.com/course/simgs/114535903716_1.pngHow 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.pngHow 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.pngEstimate, 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.pngHow 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.pngEstimate, 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.pngEstimate, 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.pngEstimate, 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.pngEstimate, 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.

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| http://www.mathster.com/course/simgs/114535903716_9.png |   |

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| Height of waterfalls | Cumulative Frequency |
| h  $\leq $ 30 | 1 |
| h  $\leq $ 35 | 3 |
| h  $\leq $ 40 | 5 |
| h  $\leq $ 45 | 7 |
| h  $\leq $ 50 | 10 |
| h  $\leq $ 55 | 15 |
| h  $\leq $ 60 | 18 |
| h  $\leq $ 65 | 20 |

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      | [1]   |
| **12)** Complete the table and the cumulative frequency graph showing the heights of 20 fountains, measured in metres.

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| http://www.mathster.com/course/simgs/114535903716_10.png |   |

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| Height of fountains | Frequency | Cumulative Frequency |
| 20  $\leq $ h  $<$ 25 | 1 |  |
| 25  $\leq $ h  $<$ 30 | 1 |  |
| 30  $\leq $ h  $<$ 35 | 3 |  |
| 35  $\leq $ h  $<$ 40 | 5 |  |
| 40  $\leq $ h  $<$ 45 | 5 |  |
| 45  $\leq $ h  $<$ 50 | 3 |  |
| 50  $\leq $ h  $<$ 55 | 1 |  |
| 55  $\leq $ h  $<$ 60 | 1 |  |

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      | [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).

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| http://www.mathster.com/course/simgs/114535903716_11.png |   |

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| Minutes | Cumulative Frequency |
| 20  $\leq $ x  $<$ 25 | 1 |
| 20  $\leq $ x  $<$ 30 | 3 |
| 20  $\leq $ x  $<$ 35 | 6 |
| 20  $\leq $ x  $<$ 40 | 9 |
| 20  $\leq $ x  $<$ 45 | 13 |
| 20  $\leq $ x  $<$ 50 | 17 |
| 20  $\leq $ x  $<$ 55 | 19 |
| 20  $\leq $ x  $<$ 60 | 20 |

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      | [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).

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| http://www.mathster.com/course/simgs/114535903716_12.png |   |

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| Minutes | Cumulative Frequency |
| 10  $\leq $ x  $<$ 15 | 1 |
| 10  $\leq $ x  $<$ 20 | 4 |
| 10  $\leq $ x  $<$ 25 | 5 |
| 10  $\leq $ x  $<$ 30 | 6 |
| 10  $\leq $ x  $<$ 35 | 11 |
| 10  $\leq $ x  $<$ 40 | 15 |
| 10  $\leq $ x  $<$ 45 | 17 |
| 10  $\leq $ x  $<$ 50 | 20 |

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      | [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 minuteshttp://www.mathster.com/course/simgs/114535903716_15.png |
| **14)** IQR = 15 minuteshttp://www.mathster.com/course/simgs/114535903716_16.png |