**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 27

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| Ages | 15 - 18 | 19 - 22 | 23 - 26 | 27 - 30 | 31 - 34 | 35 - 38 |
| No. of Students | 8 | 3 | 2 | 8 | 8 | 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 |
| 160 - 164 | 14 |
| 165 - 169 | 20 |
| 170 - 174 | 18 |
| 175 - 179 |  |
| 180 - 184 | 17 |
| 185 - 189 | 31 |

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| --- | --- |
| Score | Cumulative Freq |
| less than 165 | 14 |
| less than 170 | 34 |
| less than 175 | 52 |
| less than 180 | 72 |
| less than 185 | 89 |
| less than 190 | 120 |

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 | [1]   |
| **3)** The cumulative frequency polygon below shows the height of 20 fountains, measured in metres.http://www.mathster.com/course/simgs/55799542798_1.pngHow many fountains were less than 35 metres tall?           | [1]   |
| **4)** The cumulative frequency polygon below shows the height of 20 trees, measured in metres.http://www.mathster.com/course/simgs/55799542798_2.pngHow many trees were greater than 45 metres tall?           | [1]   |
| **5)** The cumulative frequency polygon below shows the scores of 20 students in a business studies test.http://www.mathster.com/course/simgs/55799542798_3.pngEstimate, using the graph, the number of students scoring less than 43? (Give your answer to the nearest integer)      | [1]   |
| **6)** The cumulative frequency polygon below shows the scores of 20 students in a science test.http://www.mathster.com/course/simgs/55799542798_4.pngHow many students scored more than 35 marks?           | [1]   |
| **7)** The cumulative frequency polygon below shows the number of minutes that 20 men used a telephone in one day.http://www.mathster.com/course/simgs/55799542798_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 children used a mobile phone in one day.http://www.mathster.com/course/simgs/55799542798_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 women used a computer in one day.http://www.mathster.com/course/simgs/55799542798_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 girls used a website in one day.http://www.mathster.com/course/simgs/55799542798_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 buildings, measured in metres.

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| http://www.mathster.com/course/simgs/55799542798_9.png |   |

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| Height of buildings | Cumulative Frequency |
| h  $\leq $ 45 | 1 |
| h  $\leq $ 50 | 3 |
| h  $\leq $ 55 | 7 |
| h  $\leq $ 60 | 11 |
| h  $\leq $ 65 | 15 |
| h  $\leq $ 70 | 17 |
| h  $\leq $ 75 | 19 |
| h  $\leq $ 80 | 20 |

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| **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/55799542798_10.png |   |

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| Height of fountains | Frequency | Cumulative Frequency |
| 40  $\leq $ h  $<$ 45 | 1 |  |
| 45  $\leq $ h  $<$ 50 | 2 |  |
| 50  $\leq $ h  $<$ 55 | 2 |  |
| 55  $\leq $ h  $<$ 60 | 2 |  |
| 60  $\leq $ h  $<$ 65 | 4 |  |
| 65  $\leq $ h  $<$ 70 | 5 |  |
| 70  $\leq $ h  $<$ 75 | 2 |  |
| 75  $\leq $ h  $<$ 80 | 2 |  |

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      | [1]   |
| **13)** The cumulative frequency table below shows the number of minutes that 20 children 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/55799542798_11.png |   |

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| Minutes | Cumulative Frequency |
| 20  $\leq $ x  $<$ 25 | 1 |
| 20  $\leq $ x  $<$ 30 | 2 |
| 20  $\leq $ x  $<$ 35 | 5 |
| 20  $\leq $ x  $<$ 40 | 10 |
| 20  $\leq $ x  $<$ 45 | 15 |
| 20  $\leq $ x  $<$ 50 | 18 |
| 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 children 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/55799542798_12.png |   |

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| Minutes | Cumulative Frequency |
| 40  $\leq $ x  $<$ 45 | 1 |
| 40  $\leq $ x  $<$ 50 | 3 |
| 40  $\leq $ x  $<$ 55 | 7 |
| 40  $\leq $ x  $<$ 60 | 11 |
| 40  $\leq $ x  $<$ 65 | 15 |
| 40  $\leq $ x  $<$ 70 | 17 |
| 40  $\leq $ x  $<$ 75 | 19 |
| 40  $\leq $ x  $<$ 80 | 20 |

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      | [1]   |

**Solutions for the assessment Cumulative Frequency**

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| --- | --- |
| **1)** 21 | **2)** The missing value is 20. |
| **3)** 5 | **4)** 8 |
| **5)** 11 | **6)** 11 |
| **7)** 59 minutes | **8)** 35 minutes |
| **9)** 65 minutes | **10)** 15 minutes |
| **11)** http://www.mathster.com/course/simgs/55799542798_13.png |
| **12)** Cumulative Frequencies are 1, 3, 5, 7, 11, 16, 18, 20.http://www.mathster.com/course/simgs/55799542798_14.png |
| **13)** Median = 40 minuteshttp://www.mathster.com/course/simgs/55799542798_15.png |
| **14)** IQR = 12 minuteshttp://www.mathster.com/course/simgs/55799542798_16.png |