**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   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 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.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | Score | Frequency | | 160 - 164 | 14 | | 165 - 169 | 20 | | 170 - 174 | 18 | | 175 - 179 |  | | 180 - 184 | 17 | | 185 - 189 | 31 | |  | |  |  | | --- | --- | | 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 | | | [1] |
| **3)** The cumulative frequency polygon below shows the height of 20 fountains, measured in metres.  http://www.mathster.com/course/simgs/55799542798_1.png  How 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.png  How 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.png  Estimate, 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.png  How 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.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 children used a mobile phone in one day.  http://www.mathster.com/course/simgs/55799542798_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 women used a computer in one day.  http://www.mathster.com/course/simgs/55799542798_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 girls used a website in one day.  http://www.mathster.com/course/simgs/55799542798_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 buildings, measured in metres.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/55799542798_9.png |  | |  |  | | --- | --- | | Height of buildings | Cumulative Frequency | | h   45 | 1 | | h   50 | 3 | | h   55 | 7 | | h   60 | 11 | | h   65 | 15 | | h   70 | 17 | | h   75 | 19 | | h   80 | 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/55799542798_10.png |  | |  |  |  | | --- | --- | --- | | Height of fountains | Frequency | Cumulative Frequency | | 40   h   45 | 1 |  | | 45   h   50 | 2 |  | | 50   h   55 | 2 |  | | 55   h   60 | 2 |  | | 60   h   65 | 4 |  | | 65   h   70 | 5 |  | | 70   h   75 | 2 |  | | 75   h   80 | 2 |  | | | [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).   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/55799542798_11.png |  | |  |  | | --- | --- | | Minutes | Cumulative Frequency | | 20   x   25 | 1 | | 20   x   30 | 2 | | 20   x   35 | 5 | | 20   x   40 | 10 | | 20   x   45 | 15 | | 20   x   50 | 18 | | 20   x   55 | 19 | | 20   x   60 | 20 | | | [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).   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | http://www.mathster.com/course/simgs/55799542798_12.png |  | |  |  | | --- | --- | | Minutes | Cumulative Frequency | | 40   x   45 | 1 | | 40   x   50 | 3 | | 40   x   55 | 7 | | 40   x   60 | 11 | | 40   x   65 | 15 | | 40   x   70 | 17 | | 40   x   75 | 19 | | 40   x   80 | 20 | | | [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 minutes http://www.mathster.com/course/simgs/55799542798_15.png | |
| **14)** IQR = 12 minutes http://www.mathster.com/course/simgs/55799542798_16.png | |