Q1) Following data is a sub part of the data on Number Of Villages, Towns, Households, Population And Area taken from <http://www.censusindia.gov.in/2011census/population_enumeration.html>

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **India/ State/ Union Territory/ District/ Sub-district** | **Name** | **Total/ Rural/ Urban** | **Number of villages** | | **Number of towns** | **Number of households** | **Population** | | | **Area  (In sq. km)** | **Population per sq. km.** |
| **Inhabited** | **Uninhabited** | **Persons** | **Males** | **Females** |
| **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **13.00** | **14** |
| DISTRICT | Sonipat | Total | 319 | 13 | 8 | 2,77,726 | 14,50,001 | 7,81,299 | 6,68,702 | 2122.00 | 683 |
| DISTRICT | Sonipat | Rural | 319 | 13 | 0 | 1,87,552 | 9,96,637 | 5,38,750 | 4,57,887 | 2039.99 | 489 |
| DISTRICT | Sonipat | Urban | 0 | 0 | 8 | 90,174 | 4,53,364 | 2,42,549 | 2,10,815 | 82.01 | 5,528 |
| SUB-DISTRICT | Gohana | Total | 81 | 2 | 1 | 69,722 | 3,72,034 | 1,99,020 | 1,73,014 | 833.90 | 446 |
| SUB-DISTRICT | Gohana | Rural | 81 | 2 | 0 | 57,245 | 3,06,326 | 1,64,182 | 1,42,144 | 822.39 | 372 |
| SUB-DISTRICT | Gohana | Urban | 0 | 0 | 1 | 12,477 | 65,708 | 34,838 | 30,870 | 11.51 | 5,709 |
| SUB-DISTRICT | Ganaur | Total | 60 | 3 | 1 | 39,138 | 2,06,889 | 1,12,447 | 94,442 | 301.79 | 686 |
| SUB-DISTRICT | Ganaur | Rural | 60 | 3 | 0 | 32,275 | 1,71,286 | 93,456 | 77,830 | 292.73 | 585 |
| SUB-DISTRICT | Ganaur | Urban | 0 | 0 | 1 | 6,863 | 35,603 | 18,991 | 16,612 | 9.06 | 3,930 |
| SUB-DISTRICT | Sonipat | Total | 135 | 6 | 5 | 1,38,173 | 7,10,183 | 3,82,835 | 3,27,348 | 708.36 | 1,003 |
| SUB-DISTRICT | Sonipat | Rural | 135 | 6 | 0 | 71,990 | 3,83,181 | 2,07,546 | 1,75,635 | 648.55 | 591 |
| SUB-DISTRICT | Sonipat | Urban | 0 | 0 | 5 | 66,183 | 3,27,002 | 1,75,289 | 1,51,713 | 59.81 | 5,467 |
| SUB-DISTRICT | Kharkhoda | Total | 43 | 2 | 1 | 30,693 | 1,60,895 | 86,997 | 73,898 | 277.96 | 579 |
| SUB-DISTRICT | Kharkhoda | Rural | 43 | 2 | 0 | 26,042 | 1,35,844 | 73,566 | 62,278 | 276.33 | 492 |
| SUB-DISTRICT | Kharkhoda | Urban | 0 | 0 | 1 | 4,651 | 25,051 | 13,431 | 11,620 | 1.63 | 15,369 |
| DISTRICT | Gurgaon | Total | 229 | 13 | 9 | 3,26,428 | 15,14,432 | 8,16,690 | 6,97,742 | 1258.00 | 1,204 |
| DISTRICT | Gurgaon | Rural | 229 | 13 | 0 | 88,678 | 4,72,179 | 2,51,462 | 2,20,717 | 976.65 | 483 |
| DISTRICT | Gurgaon | Urban | 0 | 0 | 9 | 2,37,750 | 10,42,253 | 5,65,228 | 4,77,025 | 281.35 | 3,704 |
| SUB-DISTRICT | Pataudi | Total | 53 | 7 | 2 | 22,576 | 1,20,012 | 62,805 | 57,207 | 177.45 | 676 |
| SUB-DISTRICT | Pataudi | Rural | 53 | 7 | 0 | 15,122 | 78,688 | 41,060 | 37,628 | 147.67 | 533 |
| SUB-DISTRICT | Pataudi | Urban | 0 | 0 | 2 | 7,454 | 41,324 | 21,745 | 19,579 | 29.78 | 1,388 |
| SUB-DISTRICT | Gurgaon | Total | 32 | 1 | 3 | 2,25,460 | 9,77,337 | 5,28,493 | 4,48,844 | 333.22 | 2,933 |
| SUB-DISTRICT | Gurgaon | Rural | 32 | 1 | 0 | 12,712 | 67,331 | 36,026 | 31,305 | 131.83 | 511 |
| SUB-DISTRICT | Gurgaon | Urban | 0 | 0 | 3 | 2,12,748 | 9,10,006 | 4,92,467 | 4,17,539 | 201.39 | 4,519 |
| SUB-DISTRICT | Farrukhnagar | Total | 49 | 2 | 1 | 25,207 | 1,34,848 | 70,889 | 63,959 | 274.69 | 491 |
| SUB-DISTRICT | Farrukhnagar | Rural | 49 | 2 | 0 | 22,682 | 1,21,335 | 63,814 | 57,521 | 271.41 | 447 |
| SUB-DISTRICT | Farrukhnagar | Urban | 0 | 0 | 1 | 2,525 | 13,513 | 7,075 | 6,438 | 3.28 | 4,120 |
| SUB-DISTRICT | Manesar | Total | 34 | 0 | 1 | 24,574 | 1,16,606 | 65,540 | 51,066 | 160.80 | 725 |
| SUB-DISTRICT | Manesar | Rural | 34 | 0 | 0 | 19,500 | 93,158 | 51,159 | 41,999 | 146.10 | 638 |
| SUB-DISTRICT | Manesar | Urban | 0 | 0 | 1 | 5,074 | 23,448 | 14,381 | 9,067 | 14.70 | 1,595 |
| SUB-DISTRICT | Sohna | Total | 61 | 3 | 2 | 28,611 | 1,65,629 | 88,963 | 76,666 | 311.86 | 531 |
| SUB-DISTRICT | Sohna | Rural | 61 | 3 | 0 | 18,662 | 1,11,667 | 59,403 | 52,264 | 279.66 | 399 |
| SUB-DISTRICT | Sohna | Urban | 0 | 0 | 2 | 9,949 | 53,962 | 29,560 | 24,402 | 32.20 | 1,676 |
| DISTRICT | Faridabad | Total | 144 | 5 | 3 | 3,58,919 | 18,09,733 | 9,66,110 | 8,43,623 | 741.00 | 2,442 |
| DISTRICT | Faridabad | Rural | 144 | 5 | 0 | 63,366 | 3,70,878 | 1,98,103 | 1,72,775 | 522.58 | 710 |
| DISTRICT | Faridabad | Urban | 0 | 0 | 3 | 2,95,553 | 14,38,855 | 7,68,007 | 6,70,848 | 218.42 | 6,588 |
| SUB-DISTRICT | Faridabad | Total | 62 | 3 | 2 | 3,21,456 | 15,94,839 | 8,51,917 | 7,42,922 | 351.00 | 4,544 |
| SUB-DISTRICT | Faridabad | Rural | 62 | 3 | 0 | 26,689 | 1,60,275 | 86,260 | 74,015 | 137.08 | 1,169 |
| SUB-DISTRICT | Faridabad | Urban | 0 | 0 | 2 | 2,94,767 | 14,34,564 | 7,65,657 | 6,68,907 | 213.92 | 6,706 |
| SUB-DISTRICT | Ballabgarh | Total | 82 | 2 | 1 | 37,463 | 2,14,894 | 1,14,193 | 1,00,701 | 390.00 | 551 |
| SUB-DISTRICT | Ballabgarh | Rural | 82 | 2 | 0 | 36,677 | 2,10,603 | 1,11,843 | 98,760 | 385.50 | 546 |
| SUB-DISTRICT | Ballabgarh | Urban | 0 | 0 | 1 | 786 | 4,291 | 2,350 | 1,941 | 4.50 | 954 |

1. You meet a female fellow traveller in train who is from either of the one district of Haryana whose data is given. What is the probability that she is from rural area of Ganaur?
2. If from her conversation you find out that she belongs to the Sonipat district, then what is the probability that she is from rural area of Ganaur?
3. A foreigner who visited the Gurgaon district writes about the hospitality of a family with whom he stayed. What are the chances that the family was in the Sohna area? What are the chances that he would not have interacted with a male member?