Laboratory 14: Comprehension I

1. Use list comprehension to generate
   a. a list of all cubes between 1 and 1000
   b. a list of all multiples of 7 between 1 and 100
   c. a list of all numbers not divisible by 2, 3, and 5 between 1 and 100
   d. a list of all multiples of 7 between 1 and 1000 that give remainder 3 when divided by 5.

2. Use set comprehension and set intersection to find all numbers divisible by 15 and divisible by 21 between 1 and 1000. (Without using Mathematics, i.e. numbers divisible by the least common denominator 105.)

3. Use dictionary comprehension to create a dictionary that associates to each square number between 1 and 1000 its square root.

   The answer is
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   {0: 0, 1: 1, 4: 2, 9: 3, 16: 4, 25: 5, 36: 6, 49: 7, 64: 8, 81:
   9, 100: 10, 121: 11, 144: 12, 169: 13, 196: 14, 225: 15, 256: 16,
   289: 17, 324: 18, 361: 19, 400: 20, 441: 21, 484: 22, 529: 23,
   576: 24, 625: 25, 676: 26, 729: 27, 784: 28, 841: 29, 900: 30,
   961: 31}
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