

Exemplar Problems

Permutation and Combination

11. Find the number of positive integers greater than 6000 and less than 7000 which are divisible by 5, provided that no digit is to be repeated.

Solution:

(i) Thousand's Place can be filled with 6 alone.

Hence, number of way =1

6			
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Unit place can be filled with either 0 or 5.

Hence, number of way =2

6			0 or 5
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Hundred's place can be filled with the remaining 8 digits.

Hence, number of way =8

6	9, 8, 7, 4, 3, 2, 1 (0 or 5)		0 or 5
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Ten's place can be filled with 7 digits.

Number of ways= 7.

6	9, 8, 7, 4, 3, 2, 1 (0 or 5)	Remaining 7	0 or 5
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Thus, required number will be

$$=1 \times 8 \times 7 \times 2$$

$$=112$$