

# NCERT/CBSE MATHEMATICS CLASS 12 textbook

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MISCELLANEOUS EXERCISES

Answers to NCERT/CBSE MATH (Class XII) textbook

Chapter 13

## PROBABILITY

2. A couple has two children,

- (i) Find the probability that both children are males, if it is known that at least one of the children is male.
- (ii) Find the probability that both children are females, if it is known that the elder child is a female.

### SOLUTION:

(i) The various possible cases are BB, BG, GB and GG

Let A: At least one is a male  $\Rightarrow$  one out of BB, BG, GB is possible.

Let B: Both are a male  $\Rightarrow$  BB only is possible.

$$\text{Now, } P(B|A) = \frac{P(A \cap B)}{P(A)} = \frac{\frac{1}{4}}{\frac{3}{4}} = \frac{1}{3}$$

(ii) The various possible cases are BB, BG, GB and GG

Let A: The elder child is a female  $\Rightarrow$  GB, GG

Let B: Both children are females  $\Rightarrow$  GG

$$\text{Now, } P(B|A) = \frac{P(A \cap B)}{P(A)} = \frac{\frac{1}{4}}{\frac{2}{4}} = \frac{1}{2}$$

Please do not copy the answer given here

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