Assignment11

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Problem Statement(Gate31): An experiment consists of two papers.paper1 and paper2.The probability of failing in paper 1 is .3 and that in paper 2 is .2.Given that a student has failed in paper 2,the probability of failing in paper 1 is .6.The probability of student failing in both is
A) .5 B) .18 C) .12 D) .06

	Description
0	failure
1	success
X	Paper 1
Y	Paper 2

Table 1: Description

Given,
$Pr(X = 0) = .3$,$Pr(Y = 0) = .2$
$Pr(X = 0|Y = 0) = .6$
Using base's theorem we know that,

$$Pr(X = 0|Y = 0) = \frac{Pr(X = 0, Y = 0)}{Pr(Y = 0)}$$
$$\begin{aligned} Pr(X = 0, Y = 0) &= Pr(X = 0|Y = 0) \times Pr(Y = 0) \\ &= .6 \times .2 \\ &= .12 \end{aligned}$$

Option C is correct answer