

Answer on 39160, Math, Statistics and Probability Probability that company A gets the job is

$$P(A) = P(B) \cdot P(B|A) + (1 - P(A)) \cdot P(\bar{B}|A) = 0.9 \cdot 0.15 + 0.1 \cdot 0.2 = 0.155$$

where $P(B)$ is probability that company B bids the job.

Now we will use Bayes' theorem. It says

$$P(B|A) = \frac{P(A|B)P(B)}{P(A)}$$

where $P(B|A)$ is posterior probability that company had made the bid if we know that A got the job. So

$$P(B|A) = \frac{0.9 \cdot 0.15}{0.155} \approx 0.87$$