M 362K Pre-Class Work for 1/29

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2-35

From the question we know that $Pr(call - dad) = 0.01$, $Pr(is - dad|call - dad) = 0.90$,

$Pr(is - dad|not - call - dad) = 0.05$

$Pr(call - dad|is - dad) = \frac{Pr(call-dad \cap is-dad)}{Pr(is-dad)} = \frac{Pr(is-dad|call-dad)*Pr(call-dad)}{Pr(is-dad)} =$

$\frac{Pr(is-dad|call-dad)*Pr(call-dad)}{Pr(is-dad|call-dad)*Pr(call-dad)+Pr(is-dad|not-call-dad)*Pr(not-call-dad)} = \frac{0.9*0.01}{0.9*0.01+0.05*0.99} = 0.1538$

2-38

All the probabilities are shown in Figure 1

2-40

From the question we know that $Pr(B|A) = \frac{12}{51}$

Since $Pr(B) = \frac{13}{52} = \frac{1}{4} \neq Pr(B|A)$, A and B are dependent

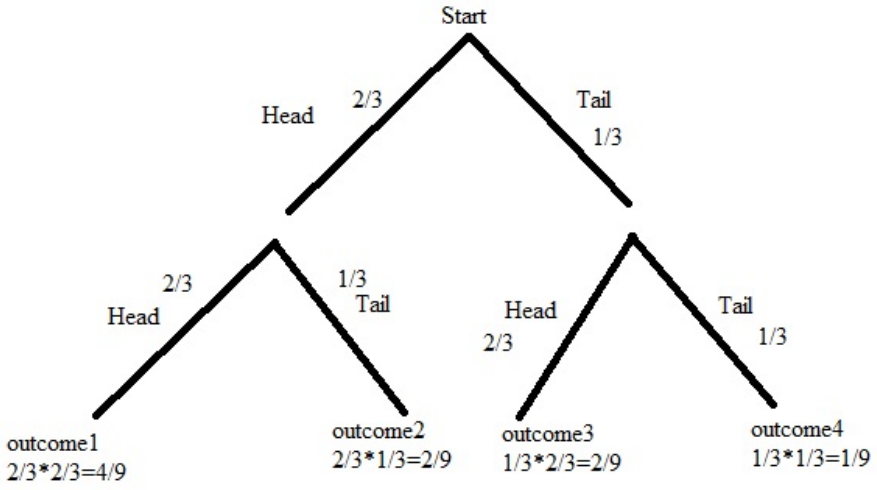

Figure 1: Tree Diagram for 2-38

2-53

Assume the number of blue balls in the second urn is x

Since the two events in both urns are independent, we can know that $Pr(same - color) =$

$Pr(both - red) + Pr(both - blue) = \frac{4}{10} * \frac{16}{x+16} + \frac{6}{10} * \frac{x}{x+16} = 0.44$

$\therefore x = 4$

There are 4 blue balls in the second urn. The answer is (A)