Conditional Probability (cont.)

If all of the possible results are equally likely

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

In all situations

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

Where you need to use the second formula

$SS = \{1, 2, 3, 4\}$
$P(1) = .11, P(2) = .23, P(3) = .45, P(4) = .21$
$P(x \geq 2 | x \leq 3) =$?_____
$= P(\{2, 3, 4\} | \{1, 2, 3\})$
$= \frac{P(\{2,3,4\} \cap \{1,2,3\}))}{P(\{1,2,3\})}$
$= \frac{.23+.45}{.11+.23+.45} = \frac{68}{79}$

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x	H	M	E	result
A	.12	.34	.23	.69
A'	.21	.05	.03	.31
result	.33	.41	.26	1

$$P(A|H) = \frac{P(A \cap H)}{P(H)} = \frac{.12}{.33} = \frac{12}{33} = \frac{4}{11}$$

Some other crap

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

$$P(A)P(B|A) = P(A \cap B)$$