Conditional Probability:
Slam Dunk 3

Name:	Class:	Date:

A die is rolled twice. What is the probability that the sum of the two numbers is 7, given that the first number is a 4?

$S = \{(1,1), (1,2), ..., (6,5), (6,6)\}$; $|S| = 36$

Event A: The first number is a 4.
Therefore, $A = \{(4,1), (4,2), (4,3), (4,4), (4,5), (4,6)\}$; $|A| = 6$

Event B: The sum of the two numbers is 7.
Therefore, $B = \{(1,6), (2,5), (3,4), (4,3), (5,2), (6,1)\}$

Therefore $B \cap A = \{(4,3)\}$; $|B \cap A| = 1$

$P(A) =$

$P(B \cap A) =$

Therefore, P(the sum of the two numbers is 7, given that the first number is a 4) = P(B, given that A)

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