W4 Assignment MMV Question

Possible hypotheses:
A: Person has MMV
B: Person doesn't have MMV

Probability of hypotheses occurring in the population:
P(A): 0.01
P(B): 0.99

Event occurred (i.e. data obtained):
D: The randomly selected person tests positive for MMV

Likelihood of event occurring given the possible hypotheses:
P(D|A): 1
P(D|B): 0.05

Probability that the person has MMV:
$P(A|D) = (1)(0.01) / ((1)(0.01) + (0.05)(0.99))$
$P(A|D) = 0.168$

The probability they have MMV is 0.168 (16.8%).

If a friend tested positive for MMV, I would tell them that while the probability that they have MMV is low, this test of probability can't actually tell them whether they have MMV or not