1. At each trial, we have 50% chance of getting T or H, since each flip of coin is independent, so the P(HTTH) = P(HHHH) = P(TTHH) = 1/16

2. P(Not choosing a man) = 1 - 21/45 = 24/45

3. We can tell that these two events are independent, because travel by plane doesn’t imply plane crash or vice versa. So P(Will be in plane crash) = 0.005% \* 10% = 0.00005 \* 0.1 = 0.000005 = 0.00005%

4. I think there are many flaws here. First, if we want to calculate the time a user spent on a website, we should ask them to take the survey at the time they enter the website. Second, the 5% is just too small. Compare a user spent just 1 minute and a user spent 15 minute at this website, the user spent longer time tends to have a higher probability of getting the survey.