

Written Homework 01 · MATH331

Review Probability

Due on Thursday February 01 11:30AM

ATTN · No LATE HOMEWORK will be accepted

Please show your work.

Exercise 1 in [Grinstead](#)

Note: \tilde{A} means compliment of A

1. Section 1.2: page 35: 1,7, 23
2. Section 4.1. page 150: 1

Exercise 2:

Your friend's child has been randomly selected for Anemia screening, using a test with false positive rate of 1% and a false negative rate of 0%. The prevalence of Anemia in children is approximately 0.3%.

Note: False Positive means: does not have disease, but tested positive

1. Fill out the table of conditional probability $P(\text{test result} \mid \text{if carries Anemia})$ below

condition if carries Anemia	True	False
Test positive	?	?
Test negative	?	?

2. If the child tested positive, what is the probability that he/she actually has Anemia?
3. You then read a research article that Anemia is 10 times more prevalent in prematurely born children. If this research is true, what is the probability that a prematurely born child has Anemia?