

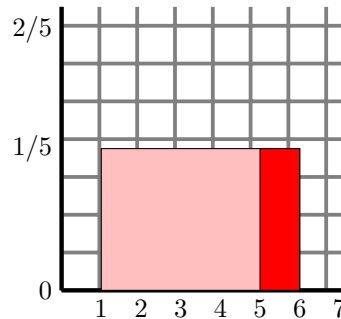
Name _____

Student Number _____

STA107H5S Quiz 7B

Consider an experiment where numbers are chosen entirely at random from the interval $[1,6]$ each with equal probability. Let X be an interval of numbers chosen.

1. (3 marks) Find the probability that $x \geq 5$. You Should draw a picture to guide your thinking and use geometry.



$$P(X > 5) = 1/5$$

2. (4 marks) Find the probability that $X \leq 4$ and $X \geq 2$. Again you should use a picture.

$$P(X \leq 4 \cap X \geq 2) = 4 - 2 / 5 = 2/5$$

3. (3 marks) For question 2, if we sampled numbers from the interval $[2,4]$ rather than $[1,6]$, would the probability for question 2 increase? You do not need to do any computations for this question.

$$\text{Would increase as } P(X \leq 4 \cap X \geq 2 \mid X \in [2, 4]) = 1$$

Don't worry, there is no question on the back of this quiz! I wanted to take a moment to say that it was a pleasure having all of you and I hope to see some of you again in upper year statistics courses!

– *Matt*