

Probability and Statistics Notes

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topic1

Topic 2: Random Variables

Exercises

Find the range for each of the following random variables.

1. I toss a coin 100 times. Let X be the number of heads i observe.

I observe that there can be 0 of the coins that are heads, while also all coins being heads and any permutation inbetween, so the result would be:

$$R_X = \{0, 1, 2, 3, \dots, 100\}$$

2. I toss a coin until the first heads appears. Let Y be the total number of coin tosses.

$$R_Y = \{1, 2, 3, 4, \dots, \infty\}$$

3. The random variable T is defined as the time (in hours) from now until the next earthquake occurs in a certain city.

$$R_T = \{0, 1, 2, 3, \dots, \infty\}$$