

Activity 3-1

Show all your work

Name: _____
Number: _____
Signature: _____
Score: ___/7

Problem 1: In your sock drawer you have four blue, five grey, and three black socks. Half asleep one morning you grab two socks at random and put them on. Draw a **probability tree** of grabbing two socks without replacement from the drawer. Then for each case below, find the probability you end up wearing

a. no grey socks

$$7/22 \approx 31.8\%$$

b. at least one black sock

$$5/11 \approx 45.5\%$$

c. a red sock

$$0$$

d. matching socks

$$19/66 \approx 28.8\%$$

Score: /5

Problem 2: The table below shows the distribution of books on a bookcase based on whether they are fiction or non-fiction and hardcover or paperback.

	Hardcover	Paperback	Total
Fiction	13	59	72
Non-fiction	15	8	23
Total	28	67	95

Find the probability of drawing a hardcover book first then a paperback fiction book second when drawing without replacement.

The probability of drawing a hardcover book is $28/95$. The probability of drawing a paperback fiction second is $59/94$. Therefore, we multiply both numbers to get

$$\frac{28}{95} \times \frac{59}{94} = \frac{28 \times 59}{95 \times 94} \approx 0.184994,$$

or 18.5%.

Score: /2

$/7$