Exercise 1C.1

What is the probability of two die rolls summing to 5, given that (at least) one of the rolls is a 2?

Exercise 1C.2

Twenty-three brain tumor patients went through a radiotherapy. Time to recurrence of brain metastasis after the treatment was recorded. The proportion of subjects metastasis-free for four weeks was 0.783. The proportion of subjects metastasis-free for eight weeks was 0.566. What is the chance that a patient surviving four weeks would be metastasis-free for another four weeks?

Hint: being met-free for 8 weeks means being met-free for the first four weeks **and** *the next four weeks.*

Exercise 1C.3

Suppose I have a bag containing two white balls and one black ball. Let:

$A =$ white ball on the first draw from the bag
$B =$ black ball on the second draw

(a) If I put balls back into the bag whenever I draw one, are A and B independent?

(b) What about if I keep balls out of the bag when I draw them?