

HW 9.3

1.

An insurance company wants to charge a higher premium to drivers of red cars because they believe they get more speeding tickets. A research company collected the following data to investigate their claim. Use the data below to decide if the insurance company should charge a higher premium to drivers of red cars.

Total cars: 20,000

Red cars: 348

Total speeding tickets: 507

Speeding tickets issued to red cars: 89

2.

Parents keep telling their teens to “turn down the music” or “turn off the computer” when studying. But teens insist that these “distraction” actually help them study better! In order to put this argument to rest, a psychologist studied whether subjects were able to memorize 20 index cards while listening to loud music or studying in silence. The sixty subjects had these results:

	Able to memorize	Not able to memorize
Loud music	9	36
Silence	3	12

a) What is the probability that a randomly chosen subject is able to memorize the index cards?

b) What is the probability that a music listener memorizes the index cards?

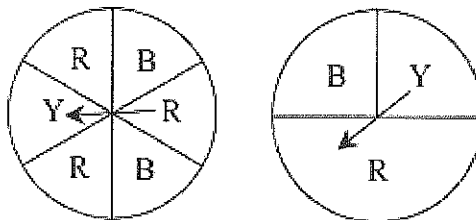
c) Is your ability to memorize independent of listening to loud music?

HW 9.4

Reminder : If events are *independent* then $P(A \text{ and } B) = P(A) * P(B)$

For each question use an area model or a tree diagram to compute the desired probability.

For problems 1-3 use the spinners at right



1. If each spinner is spun once, what is the probability that both spinners show blue?
2. If each spinner is spun once, what is the probability that both spinners show the same color?
3. If each spinner is spun once, what is the probability of getting a red-blue combination?
- 4.

At East College, 28.8% of students are in the freshman class, 25% are sophomores, 25% are juniors, and the rest are seniors. 18% of students are in the performing arts, regardless of their class standing.

- a) If there are 27,000 undergraduates at the school, how many freshmen do you expect to be in performing arts?
- b) If a students in in the performing arts, what is the probability they are a senior?
- c) Is being in performing arts independent of your class standing?