Félicitations ! Vous avez réussi !
POUR RÉUSSIR 75 % ou plus

Continuer à apprendre

NOTE
100%

Practice quiz on Problem Solving

TOTAL DES POINTS 9

1. I am given the following 3 joint probabilities: 1 / 1 point

p(I am leaving work early, there is a football game that I want to watch this afternoon) = .1

p(I am leaving work early, there is not a football game that I want to watch this afternoon) = .05

p(I am not leaving work early, there is not a football game that I want to watch this afternoon) = .65

What is the probability that there is a football game that I want to watch this afternoon?

- .1
- .35
- .3
- .2

Correct
Getting the answer is a two-step process. First, recall that the sum of probabilities for a probability distribution must sum to 1. So the "missing" joint distribution

p(I am not leaving work early, there is a football game I want to watch this afternoon) must be $1-(0.1+0.05+0.65)=0.2$

By the sum rule, the marginal probability p(there is a football game that I want to watch this afternoon) = the sum of the joint probabilities

P(I am leaving work early, there is a football game that I want to watch this afternoon) + P(I am not leaving work early, there is a football game I want to watch this afternoon) = $.1+.2=.3$

2. The joint probability of my summiting Mt. Baker in the next two years AND publishing a best-selling book in the next two years is .05. If the probability of my publishing a best-selling book in the next two years is 10%, and the probability of my summiting Mt. Baker in the next two years is 30%, are these two events dependent or independent? 1 / 1 point

- Independent
- Dependent

Correct
We know this because the joint distribution of 5% does not equal the product distribution of $(0.1)\times(0.3)=3\%$. If I summit Mt. Baker, I am more likely to publish a best-selling book, and vice versa.

3. The joint probability of my summiting Mt. Baker in the next two years AND my publishing a best-selling book in the next two years is .05. 1 / 1 point

If the probability of my publishing a best-selling book in the next two years is 10%, and the probability of my summiting Mt. Baker in the next two years is 30%, what is the probability that (sadly) in the next two years I will neither summit Mt. Baker nor publish a best-selling book?

- .95
- .65
- .9
- .25

Correct
Set A = I will summit Mt. Baker in the next two years

Set B = I will publish a best-selling book in the next two years.

Since $p(A)=0.3$ and $p(A,B)=0.05$, by the SUM RULE we know that $p(A,\sim B)=(0.3-0.05)=0.25$

Since $p(B)=0.1 p(\sim B)=0.9$

Since $p(\sim B)=0.9$ and $p(A,\sim B)=0.25$ and again by the SUM RULE, $p(\sim A,\sim B)=0.9-0.25=.65$

4. I have two coins. One is fair, and has a probability of coming up heads of .5. The second is bent, and has a probability of coming up heads of .75. If I toss each coin once, what is the probability that *at least* one of the coins will come up heads? 1 / 1 point

- .375
- 1.0
- .625