Simple Probability Review
Algebra 2

Name: Key

Eric is trying to decide between Dominos, Little Caesars, or Hungry Howies for dinner tonight. In Eric's hometown there are two Little Caesars, one Dominos, and three Hungry Howies. Regardless of the restaurant he chooses, Eric is 60 percent likely to order a pepperoni pizza, 30 percent likely to order a veggie pizza, and 10 percent likely to order a plain cheese pizza.

a) Create an area model or tree diagram to represent the sample space and probabilities for this situation.

Pizza \ Rest	LC 2/6	D 1/6	H 3/6
P .6	.2	.1	.3
V .3	.1	.05	.15
C .1	.033	.016	.05

b) What is the probability that Eric gets a pizza from Dominos or a pepperoni pizza?

~~.116~~ ~~.30~~ .06

c) What is the probability that Eric orders a veggie pizza?

.3

d) What is the probability that Eric does not order a veggie pizza?

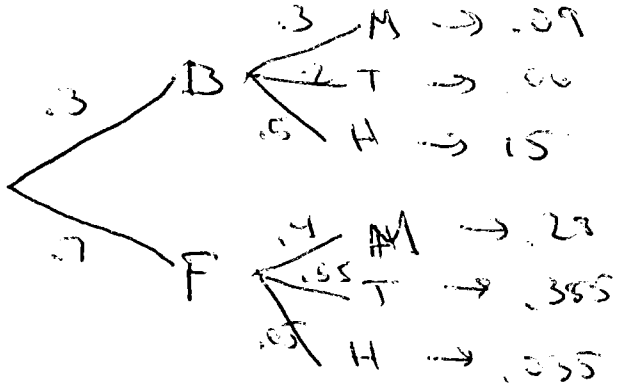
.7

e) What is the most likely combination? What is the probability that Eric chooses that combination?

~~EC~~ Pep from HH, 30%

It's 2:50 and Muscle Mark is finally done with school. After school is over, he either rides the bus, which happens 30% of the time, or gets a ride home with a friend (the other 70% of the time). Once he catches his ride, he does one of three things, he either listens to music, talks to someone, or starts his homework. When he rides the bus home, he does homework 50% of the time or talks to a friend 20% of the time. When he rides home with his friend, he listens to music 40% of the time or talks to his friend 55% of the time.

a) Create an area model or tree diagram to represent the sample space and probabilities for this situation.

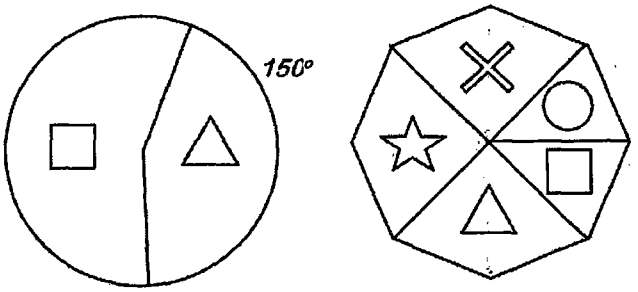


b) What is the probability that Mark talks to a friend on the way home?

c) What is the probability Mark takes the bus and listens to music?

d) When Mark arrives home, his father ask, what he did on the way home. Mark says "I talked to my friend". Mark's father, being a very smart man, says "I bet I can guess how you got home". What should Marks' father guess and how do you know.

Here's a new spinner game for ya! This game consists of 2 spinners, a circle and an octagon spinner with different shapes inside them. If Gigi spins each spinner once, answer the following questions.

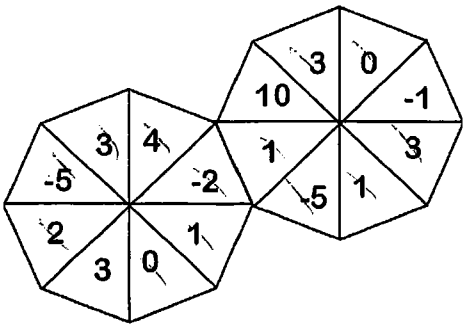


a. Organize your information using one of our models.

b. What is the probability Gigi spins a square?

c. What is the probability Gigi spins a double square?

d. If Jackson was to bet on Gigi spinning a certain combination, where should he place his bet? If there is more than one answer, explain.



This is Pentagonal trapezohedron. Basically it's a 10-sided diced that is unfolded. The dice is rolled to see how much you win. The number you roll is the amount you win or lose.

a. What is the probability you roll a 3?

4/16 = 1/4

b. What is the probability you roll any negative amount?

4/16 = 1/4

c. What's the expected value for the dice? Show your work.

$3(\frac{4}{16}) + 0(\frac{2}{16}) + 1(\frac{3}{16}) + 2(\frac{1}{16}) + -5(\frac{2}{16}) + 4(\frac{1}{16}) + -2(\frac{1}{16}) + 10(\frac{1}{16}) + -1(\frac{1}{16}) = 1.125$

d. If the game cost $2, would you play? Explain why or why not.

No, you will lose money

e. What would you have to charge to make this a fair game?

$1.12 ~ $1.13

The Seaholm newspaper recently made the claim that having a dog leads to a higher chance you could have asthma. Intrigued by this story, Detective Wesoloski was on the case. She created a survey for Mr. Barbers Algebra 2 classes and go these results.
Of the 42 kids in the classes, 30 have a dog, 32 do not have asthma, and 8 have a dog and asthma.

a) Create a two-way table to represent this data.

	Dog	No Dog	Total
Asthma	8	2	10
No Asthma	22	10	32
Total	30	12	42

b) What is the probability that a student selected at random has asthma?
(Show your calculations.)

10/42 ≈ 24%

c) If we know that a student owns a dog, what is the probability they have asthma?
(Show your calculations.)

8/30 ≈ 27%

d) Is the claim, people who have dogs, are more likely to have asthma, then those who don't a legitimate claim? Explain why or why not using the answers from part b and c.

Yes, but not much more, only 3% more, so it's probably not the dogs fault.