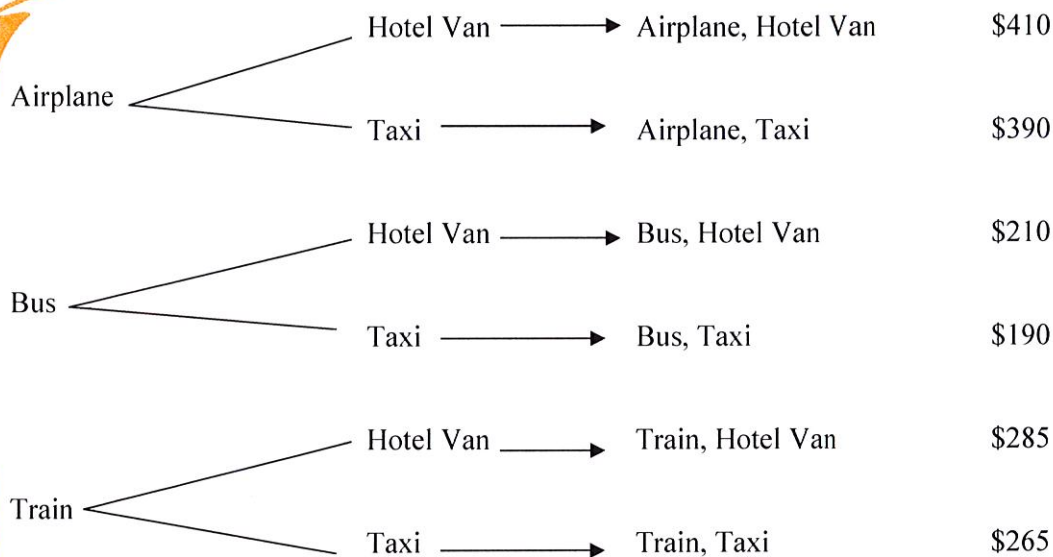


Travel Time Answer Key

A travel agent plans trips for tourists from Chicago to Miami. He gives them three ways to get from town to town: airplane, bus, train. Once the tourists arrive, there are two ways to get to the hotel: hotel van or taxi. The cost of each type of transportation is given in the table below.

Transportation Type	Cost
Airplane	\$350
Bus	\$150
Train	\$225
Hotel Van	\$60
Taxi	\$40

1. Draw a tree diagram to illustrate the possible choices for the tourists. Determine the cost for each outcome.



2. If these six outcomes are chosen equally by tourists, what is the probability that a randomly selected tourist travel in a bus? $\frac{2}{6}$ or $\frac{1}{3}$

3. What is the probability that a person's trip cost less than \$300? $\frac{3}{6}$ or $\frac{1}{2}$

4. What is the probability that a person's trip costs more than \$350? $\frac{2}{6}$ or $\frac{1}{3}$

5. If the tourists were flying to New York, the subway would be a third way to get to the hotel. How would this change the number of outcomes? Use the Fundamental Counting Principle to explain your answer. *Using the Fundamental Counting Principle, I would multiply 3×3 to get 9 outcomes.*

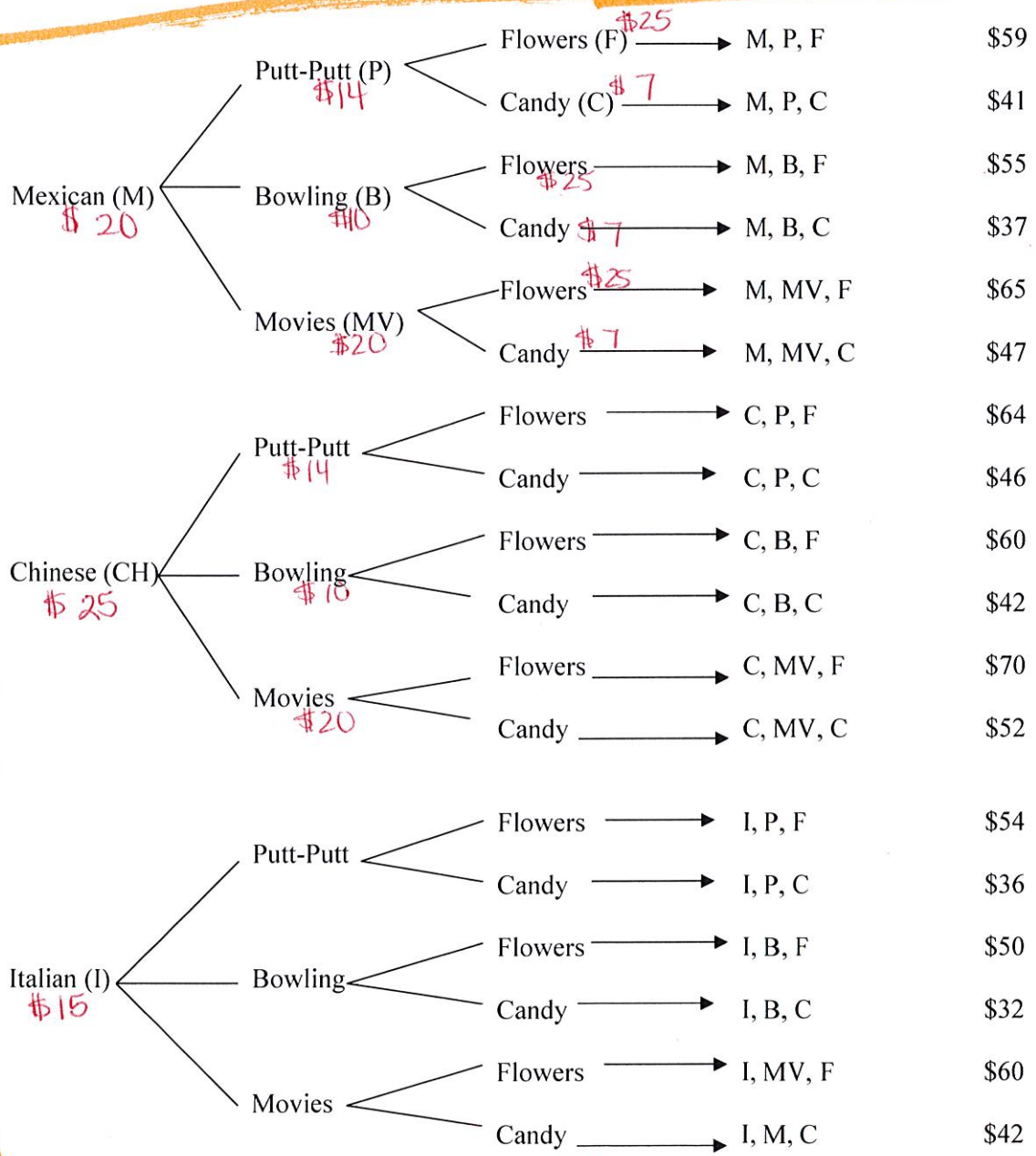
"Happy Birthday to You" Answer Key

"Seafood" was not originally meant to be an option.

Andy has asked his girlfriend to make all the decisions for their date on her birthday. She will pick a restaurant and an activity for the date. Andy will choose a gift for her. The local restaurants include Mexican, Chinese, Seafood, and Italian. The activities she can choose from are Putt-Putt, bowling, and movies. Andy will buy her either candy or flowers.



- How many outcomes are there for these three decisions? ~~18~~ ^{with seafood} 24
- Draw a tree diagram to illustrate the choices.



“Happy Birthday to You” Answer Key (continued)

Dinner for Two	Activity Cost for Two	Gift Cost
Mexican - \$20	Putt-Putt - \$14	Flowers - \$25
Chinese - \$25	Bowling - \$10	Candy - \$7
Italian - \$15	Movies - \$20	

3. If all the possible outcomes are equally likely, what is the probability that the date will cost at least \$50? $\frac{10}{18}$ or $\frac{5}{9}$ | $\frac{15}{24}$ or $\frac{5}{8}$ with seafood included.
4. What is the maximum cost for the date? \$70 | \$75 with seafood
5. What is the minimum cost for the date? \$32
6. To the nearest dollar what is the average cost for this date? \$51 | \$53.17 with sea-food.
7. What is the probability that the date costs exactly \$60? $\frac{2}{18}$ or $\frac{1}{9}$ | $\frac{2}{24}$ or $\frac{1}{12}$
8. What is the probability that the date costs under \$40? $\frac{3}{18}$ or $\frac{1}{6}$ | $\frac{3}{24}$ or $\frac{1}{8}$

Counting Principle

Probability Word Problems

ANSWER KEY

(1) The menu has 3 different sandwiches and 7 flavors of drink. How many lunch combinations can you choose from?

$$3 \times 7 = 21$$

(2) How many different cars can you get from 3 styles, 2 colors and 3 different engines?

$$3 \times 2 \times 3 = 18$$

(3) We have 3 kinds of lenses, 3 different filter coatings and 8 styles of eyeglass frames. How many combinations of glasses are possible?

$$3 \times 3 \times 8 = 72$$

(4) How many outfits can you get from 5 shirts, 8 pairs of pants and 5 pairs of shoes?

$$5 \times 8 \times 5 = 200$$

(5) This window comes in 6 different styles, different 10 sizes and with 2 different kinds of glass. How many possible combinations of this window are there?

$$6 \times 10 \times 2 = 120$$

(6) If you can get 9 kinds of pens in 4 different ink colors, how many different pens are available?

$$9 \times 4 = 36$$