

Name _____

Date _____

Advanced Algebra

Unit 7: Probability-Tree Diagrams and Probability

Assignment #8

Make a tree diagram or a list for the following and find the probability for the given question.

1) Two dice are thrown together. Find the probability that one number is even and the other number is odd.

- | | | | | | |
|-----|-----|-----|-----|-----|-----|
| 1-1 | 2-1 | 3-1 | 4-1 | 5-1 | 6-1 |
| 1-2 | 2-2 | 3-2 | 4-2 | 5-2 | 6-2 |
| 1-3 | 2-3 | 3-3 | 4-3 | 5-3 | 6-3 |
| 1-4 | 2-4 | 3-4 | 4-4 | 5-4 | 6-4 |
| 1-5 | 2-5 | 3-5 | 4-5 | 5-5 | 6-5 |
| 1-6 | 2-6 | 3-6 | 4-6 | 5-6 | 6-6 |

2) Two dice are thrown together. Make a n organized list of the outcomes.(there are 36 total)

a) Find the probability that both numbers are less than five.

$$\frac{16}{36}$$

b) What is the probability that the sum of the dice is 5 or less?

$$\frac{10}{36}$$

c) What is the probability that both numbers are more than 2?

$$\frac{16}{36}$$

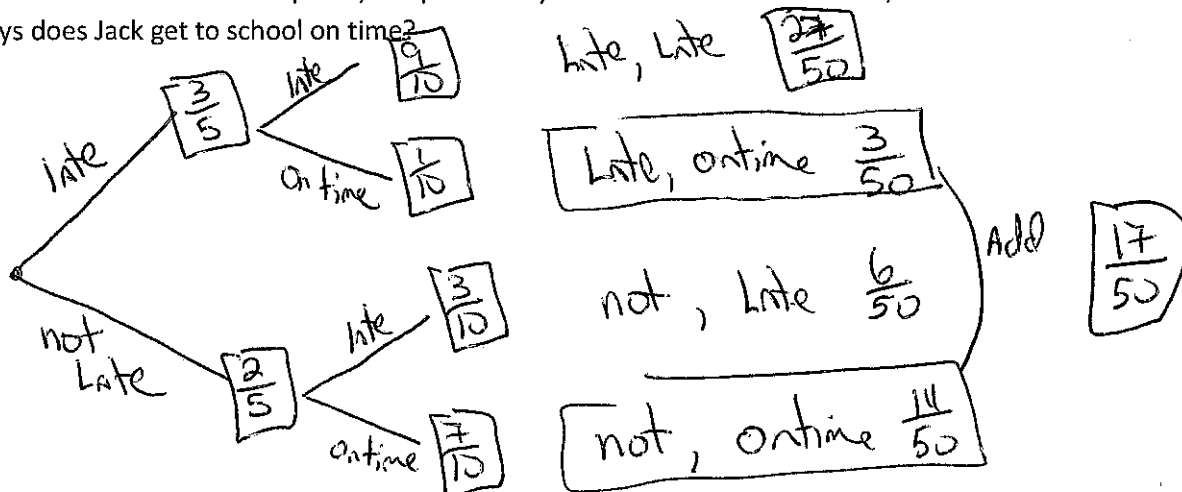
d) What is the probability that the product of the two dice is 6?

$$\frac{4}{36}$$

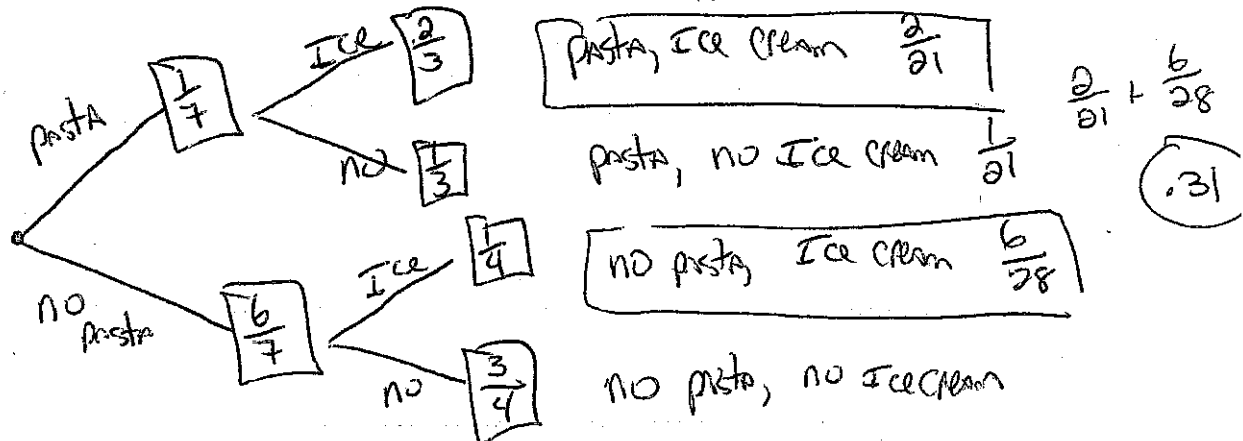
e) What is the probability that both dice are even?

$$\frac{9}{36}$$

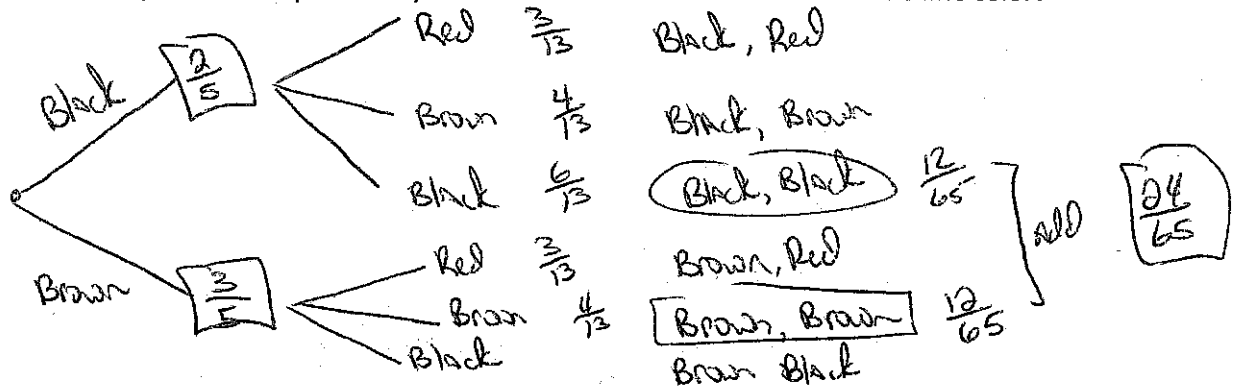
3) Jack wakes up late on average 3 days in every 5. If Jack wakes up late, the probability he's late for school is 9/10. If Jack does not wake up late, the probability that he's late for school is 3/10. What percent of days does Jack get to school on time?



4) Tina's favorite meal is pasta, followed by ice cream for dessert. Tina's Mom cooks pasta once a week. If she cooks pasta, then the probability Tina gets Ice Cream is $\frac{2}{3}$. If she doesn't cook pasta, the probability that Tina gets Ice Cream is $\frac{1}{4}$. What is the probability that Tina gets Ice Cream for dessert?



5) Teddy has two pairs of black shoes and three pairs of brown shoes. He also has three pairs of red socks, four pairs of brown socks and 6 pairs of black socks. If he chooses a pair of shoes at random and a pair of socks at random, what is the probability that he chooses shoes and socks of the same color?



6) Teddy has two pairs of black shoes and three pairs of brown shoes. He also has three pairs of red socks, four pairs of brown socks and 6 pairs of black socks. If he chooses a pair of shoes at random and a pair of socks at random

a) What is the probability that the color he chooses are black and brown.

$$\frac{8}{65} + \frac{18}{65}$$

$$\frac{26}{65}$$

b) What is the probability that the color he chooses are black or brown?

$$\frac{2}{5} \cdot \frac{4}{13} + \frac{2}{5} \cdot \frac{6}{13} = \frac{20}{65}$$

$$\frac{3}{5} \cdot \frac{4}{13} + \frac{3}{5} \cdot \frac{6}{13} = \frac{30}{65}$$

$$\frac{50}{65}$$