Compound Events

7th Grade Math

Name: Key

1. Identify if each question on this worksheet an example of an ***independent*** or ***dependent*** compound event? Write "I" or "D" next to each numbered question (except #1).

I 2. A game show contestant spins a spinner with the letters A through H on it, then either an easy or hard question is picked randomly for her. Identify the probability that the spinner will **not** stop on the letter F and she is given a hard question.

$P(\text{Not F and Hard Q}) = \frac{7}{8} \cdot \frac{1}{2}$

$= \frac{7}{16}$

D 3. Your drawer contains 10 red socks and 9 blue socks. It's too dark to see which are which, but you grab two anyway. Identify the probability that both socks are blue.

$P(\text{B then B}) = \frac{\cancel{18}^{9}}{19} \cdot \frac{\cancel{8}^{4}}{\cancel{18}^{9}}$

$= \frac{4}{19}$

D 4. A shuffled deck of cards is placed face-down on the table. It contains 4 hearts, six diamonds, two clubs and three spades. Identify the probability that the top card is a club and the next card is a diamond.

$P(\text{club then diam.}) = \frac{\cancel{12}^{2}}{\cancel{515}} \cdot \frac{\cancel{26}^{6}}{\cancel{14}^{7}}$

$= \frac{2}{35}$

I

5. The game of backgammon uses two standard dice, each with the numbers one through six. You need to roll double 4s to win the game. Identify the probability you will get that result on your next roll.

$$P(4 \text{ and } 4) = \frac{1}{6} \cdot \frac{1}{6}$$

$$= \frac{1}{36}$$

D

6. A bowl of fruit is on the table. It contains five apples, 6 oranges, and two bananas. Ethan and Adam come home from school and randomly grab one fruit each. Identify the probability that Ethan grabs an orange and Adam grabs an apple.

$$P(\text{Orange and Apple}) = \frac{\cancel{6}}{13} \cdot \frac{5}{\cancel{12}}$$

$$= \frac{5}{26}$$

I

7. You accidentally dropped a coin from the top of 11 stairs. Identify the probability that it will land above the second step and heads up.

$$P(\text{above 2nd step and H}) = \frac{9}{11} \cdot \frac{1}{2}$$

$$= \frac{9}{22}$$

D

8. An animal cage is holding 5 black cats and 4 white cats. None of them want to be in there. The cage door is opened slightly and two cats escape. Identify the probability that one of each color escapes.

$$P(\text{bl and wh}) = \frac{5}{9} \cdot \frac{\cancel{4}}{\cancel{8}} \quad \text{or} \quad P(\text{wh and bl}) = \frac{\cancel{4}}{9} \cdot \frac{5}{\cancel{8}}$$

$$= \frac{5}{18} \leftarrow \text{same} \rightarrow = \frac{5}{18}$$

I

9. You will throw two dice, one numbered 1 to 9 and the other with the letters A through G. Identify the probability that you will roll a 2 and an H

$$P(2 \text{ and } H) = \frac{1}{9} \cdot \frac{0}{7}$$

$$= 0$$