

Name:

Keely

Date:

Hour:

Advanced Geometry

12.1 – 12.4 PC Review WS

1. A CD has 5 upbeat songs and 7 slow songs. What is the probability that a randomly selected song is upbeat?

$$\boxed{\frac{5}{12}}$$

2. A cooler contains 18 cans: 9 of lemonade, 3 of iced tea, and 6 of cola. Dee selects a can without looking. What is the probability that Dee selects iced tea?

$$\frac{3}{18} = \boxed{\frac{1}{6}}$$

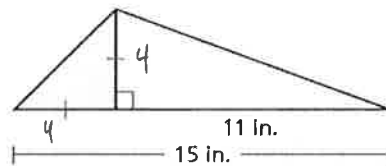
3. Find the probability that a point chosen at random inside the figure shown is in the shaded region.

$$\frac{1}{2}(4)(4) = 8$$

$$\frac{8}{30} = \frac{4}{15}$$

$$\frac{1}{2}(4)(15) = 30$$

$$\boxed{0.27}$$



4. A number cube is rolled 50 times, and a 2 is rolled 12 times. Find the experimental probability of not rolling a 2.

$$50 - 12 = 38$$

$$\frac{38}{50} = \frac{19}{25}$$

$$\boxed{0.76}$$

5. A DJ randomly selects 2 out of 8 ads to play before her show. Two of the ads are by a local retailer. What is the probability that she will play both of the retailer's ads before her show?

$$\frac{1}{8C_2} = \boxed{\frac{1}{28}}$$

6. The coach randomly selects 4 runners from a team of 20 to run a relay. What is the probability that the coach will select the 4 slowest runners?

$$\frac{1}{20C_4} = \boxed{\frac{1}{4845}}$$

Don't
DO

7. There are 13 green marbles, 8 red marbles, and 12 white marbles in a bag. What is the probability of not selecting a green marble?

$$\frac{20}{33} \quad \boxed{0.61}$$

8. A 9 cm x 13 cm rectangle has a circle inside of it with a radius of 2 cm. What is the probability that a randomly selected point will be within the circle?

$$9(13) = 117 \quad \frac{4\pi}{117} \quad \boxed{0.11}$$

$$\pi(2)^2 = 12.57$$

9. A bag contains 25 checkers – 15 red and 10 black. Find the probability.

* Drawing 2 checkers

- a. selecting a red checker, without replacement

$$\frac{15}{25} \cdot \frac{14}{24} = \frac{7}{20} \quad \boxed{0.35}$$

- b. selecting a red checker, with replacement

$$\frac{15}{25} \cdot \frac{15}{25} = \frac{9}{25} \quad \boxed{0.36}$$

10. You have a standard deck of 52 cards. Find the probability.

- a. A nine, then a face card, then an ace is drawn, with replacement

$$\frac{4}{52} \cdot \frac{12}{52} \cdot \frac{4}{52} = \boxed{0.001}$$

- b. A red, then an eight is drawn, without replacement

$$\frac{26}{52} \cdot \frac{3}{51} = \frac{1}{34} \quad \boxed{0.029}$$

- c. A diamond, then a seven is drawn, without replacement

$$\frac{13}{52} \cdot \frac{3}{51} = \frac{1}{68} \quad 0.15$$

11. At a clothing store, 75% of the customers buy pants. Only 20% of customers buy pants and a belt. What is the probability that a customer who buys pants also buys a belt?

$$P(A \text{ and } B) = P(A) \cdot P(B|A)$$

$$\frac{0.20}{0.75} = \frac{0.75 \times}{0.75} \quad \boxed{P(B|A) = 0.27}$$

12. Find each probability.

a. Rolling a 5 or an odd number on a numbered cube

$$\frac{1}{6} + \frac{3}{6} - \frac{1}{6} = \boxed{\frac{1}{2}}$$

b. Lincoln High School has 98 teachers. Of the 42 female teachers, 8 teach math. One-seventh of all the teachers teach math. What is the probability that a teacher is a man or does not teach math?

$$\frac{56 + 84 - 50}{98}$$

$$\frac{90}{98} = \frac{45}{49} \quad \boxed{0.92}$$

	Math	No Math	T
M	6	50	56
F	8	34	42
T	14	84	98

c. A card is drawn from a deck of 52. What is the probability that the card is a heart or a 6?

$$\frac{13 + 4 - 1}{52} = \frac{16}{52} \quad \boxed{\frac{4}{13}} \quad 0.31$$

d. After a conference, 220 men and 270 women respond to a survey. Of those, 200 men and 230 women say the conference was impactful. What is the probability of randomly selecting a women who said the conference was impactful?

$$\frac{230}{490} = \frac{23}{49} \quad \boxed{0.47}$$

	Impact	No Imp.	T
M	200	20	220
F	230	40	270
T	430	60	490

13. In a clothing business, 70% of customers buy a shirt and 25% of those customers also buy a legging. Draw a tree diagram to illustrate this situation. Find the probability of a customer who buys a shirt but does not buy a legging.

