Name: Date: KEY Hour:

9th Grade Geometry
12.1 – 12.4 Review WS

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

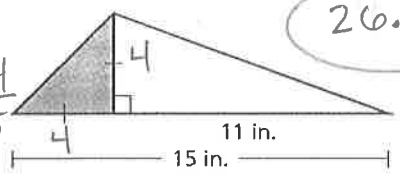
$\frac{5}{12}$

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?

$\frac{3}{18} = \frac{1}{6} = .17$ or 17%

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

$\frac{A_{SHADED}}{A_{TOTAL}} = \frac{\frac{1}{2}bh}{\frac{1}{2}bh} = \frac{\frac{1}{2}(4)(4)}{\frac{1}{2}(15)(4)} = \frac{8}{30} = \frac{4}{15}$



26.7%

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

$\frac{38}{50} = .76 = 76\%$

5. 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?

$\frac{20}{33} = .6060 = 60.6\%$

6. 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?

$\frac{A_{circle}}{A_{TOTAL}} = \frac{4\pi}{117} = .107$ or 10.7%

7. A bag contains 25 checkers – 15 red and 10 black. You draw 2 checkers out of the bag. Find each probability.
   a. selecting a red checker, without replacement

$\frac{15}{25} \cdot \frac{14}{24} = \frac{210}{600} = .35$ or 35%

   b. selecting a red checker, with replacement

$\frac{15}{25} \cdot \frac{15}{25} = \frac{3}{5} \cdot \frac{3}{5} = \frac{9}{25} = .36$ or 36%

8. 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

$$\frac{4}{52}\cdot\frac{12}{52}\cdot\frac{4}{52} = \frac{1}{13}\cdot\frac{3}{13}\cdot\frac{1}{13} = \frac{3}{2197} = .00137 = .137\%$$

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

$$\frac{1}{2}\cdot\frac{3}{51} = \frac{3}{102} = .029 = 2.9\%$$

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

$$\frac{1}{4}\cdot\frac{3}{51} = \frac{3}{204} = .0147 = 1.47\%$$

X 9. 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?

Don't worry about this one – put on here by mistake (Answer is 26.7%)

10. Find each probability.
   a. Rolling a 5 or an odd number on a numbered cube

$$P(5) + P(\text{odd}) - P(\text{odd } 5)$$

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

   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?

$$P(\text{man}) + P(\text{not math}) - P(\text{male + not math})$$

$$\frac{56}{98} + \frac{84}{98} - \frac{50}{98} = \frac{90}{98} = .918 = 91.8\%$$

	M	F	TOT
Math	6	8	14
Non	50	34	84
TOT	56	42	98

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

$$P(\text{heart}) + P(6) - P(6 \text{ of hearts})$$

$$\frac{13}{52} + \frac{4}{52} - \frac{1}{52} = \frac{16}{52} = .308 = 30.8\%$$

   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?

$$\frac{230}{490} = .469 = 46.9\%$$

	M	W	Tot
Impact	200	230	430
Not	20	40	60
Total	220	270	490