HA2T 10.1 to 10.2 Quick Review Name: Key

1. Ashley rolled a die 10 times and kept track of her results shown here. {1, 3, 6, 1, 2, 6, 5, 2, 1, 4}

   a. Based on Ashley's results, what is the experimental probability of getting a 2?

   $\frac{2}{10} = \frac{1}{5}$

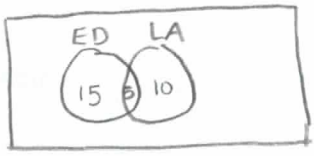
   b. What is the theoretical probability of getting a 2?

   $\frac{1}{6}$

2. Suppose 20% of students have early dismissal, 15% have late arrival and 5% have both. What is the probability that a student has late arrival or early dismissal?

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ $= 30\%$

$.2 + .15 - .05$



3. Given P(A) = .4, P(B) = .2, and P(A and B) = .1 are events A and B independent? Explain.

no because $P(A \text{ and } B) \neq P(A) \cdot P(B)$

$.1 \neq (.4)(.2)$

4. Given P(A) = .4, P(B) = .2, and P(A or B) = .6 are events A and B mutually exclusive? Explain.

yes because $P(A \text{ or } B) = P(A) + P(B)$

$.6 = .4 + .2$ ✓

5. A bag contains 3 blue marbles, 4 green marbles and 2 red marbles. Find the probability of picking a blue marble, keeping it, and then picking another blue marble.

$\frac{3}{9} \cdot \frac{2}{8} = \boxed{\frac{1}{12}}$

6. In a math class of 30 students, 17 are boys and 13 are girls. On a unit test, 4 boys and 5 girls received an "A" grade. If a student is chosen at random from the class, what is the probability of choosing a girl or a student who received an "A"?

$P(\text{girl or A}) = P(G) + P(A) - P(G \text{ and } A)$

$\frac{13}{30} + \frac{9}{30} - \frac{5}{30} = \boxed{\frac{17}{30}}$

7. In a bag containing 15 billiard balls of three colors – red, yellow and white. Frank picks a ball at random, records the color and replaces it. He repeats this experiment 25 times and tallies his results as shown:

Color	Frequency
Yellow	8
Red	13
White	4

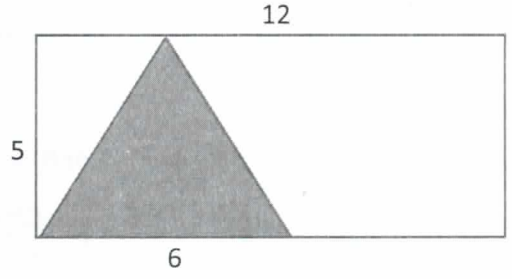
What is the best prediction of the number of balls of each color in the bag?

red: $\left(\frac{13}{25}\right)(15) = 8$

yellow: $\left(\frac{8}{25}\right)(15) = 5$

white: $\left(\frac{4}{25}\right)(15) = 2$

8. Find the probability that a randomly chosen point is in the shaded region.



The rectangle is 5 by 12 and the base of the triangle is 6.

$A_{\triangle} = 15$

$A_{\square} = 60$

$\frac{15}{60} = \boxed{\frac{1}{4}}$