

Instructions: This activity will be conducted using a die and a coin. Your instructor will provide them, or you can use your own. You may use multiples of your coin and die combination to speed up the experiment.

1. Describe the die you chose. How many sides does it have and how are they labeled?

6-sided w/ #'s (rather than dots)

2. Choose an event (we'll call it Event A) that relates to your die. It can be even number, or (1,2,5) or numbers divisible by 3, etc. Describe your event. What is the probability of the event you chose?

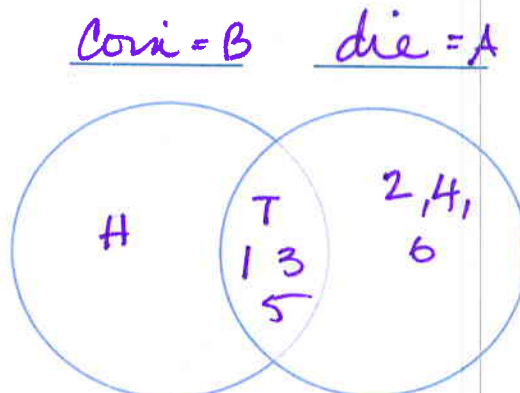
odd #

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

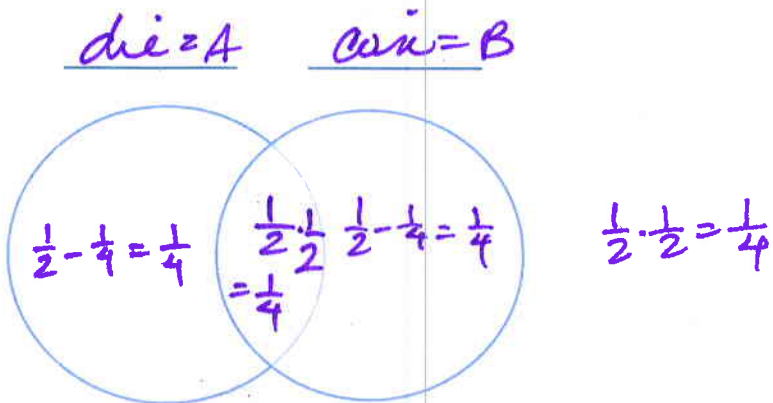
3. Event B is the probability of getting a particular outcome on the coin. Your choice. Which did you choose and what is its probability?

$$\text{tails} = \frac{1}{2}$$

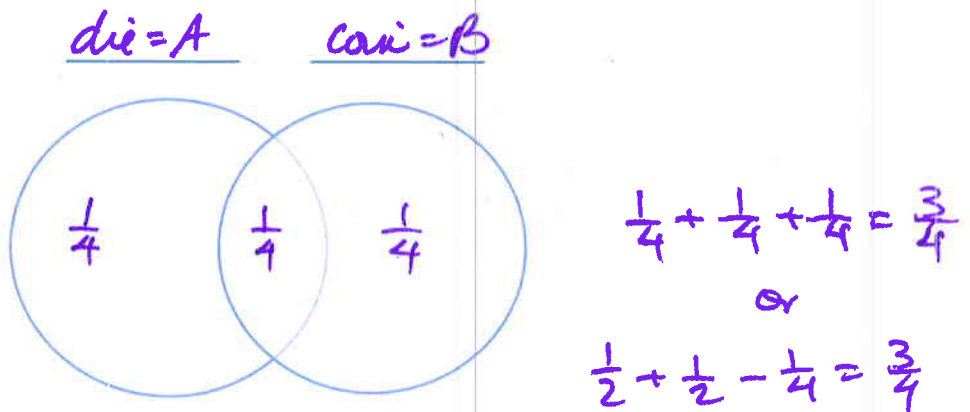
4. Draw a Venn diagram illustrating all the possible outcomes for Event A, Event B and how they relate to the set of all outcomes of tossing the coin and rolling the die.



5. Since the roll of the die and the flip of the coin are independent of each other, what is the intersection of your events A and B? Write it in correct notation and give the value of the probability. Label it on the Venn diagram below.



6. What is the probability of the union of events A and B (in other word, either A or B happens)? Calculate the union and label it on the diagram below. Label with appropriate notation.



7. What is the probability of the complement of A union B?

$$1 - \frac{3}{4} = \frac{1}{4}$$

8. What is the probability of the complement of A intersection B?

$$1 - \frac{1}{4} = \frac{3}{4}$$

9. Run 25 experiments to measure the probability of the intersection of A and B. How close is it?

	$A \cap B$	Not $A \cap B$
Tally		
Probability	$\frac{7}{25}$	$\frac{18}{25}$

pretty close