

*Each WA is worth 10 points. Work right on these pages, then scan and upload or give to me in print. You can work together or see a tutor, but NEVER copy. This WA is for a grade, so dishonesty or cutting corners may earn a 0 for all involved.*

1. [2 pts - 1 each] Clearly define each term below in the context of probability.

(a) experiment

(b) outcome

2. [1 pt] Give an example - using the notation of sets - of an event related to the experiment of deciding which instrument to learn in order to be in the 5th-6th grade band. Briefly explain what makes your example an event.

3. [1 pt] Give an example of a sample space for picking your favorite season of the year. Briefly explain what makes your example a sample space.

4. [4 pts - 1 each] An experiment involves choosing one object out of a bag that contains: 2 red marbles, 2 red cubes, 3 blue marbles, 2 white marbles, 2 white cubes, 2 black marbles, 1 green marble, 2 yellow marbles. Report the probability of each event below by using ONE of the 7 intuitive phrases below, and briefly explain why you picked what you did. (You can use a phrase more than once.)

*never*

*very seldom*

*unlikely, but not super-rare*

*roughly even chance*

*always*

*very often*

*likely, but not super-often*

(a) You get a white object.

(b) You get an object that's not orange.

(c) You get a red, green, or yellow object.

(d) You get a marble.

5. [1 pt] Suppose a bag contains equal numbers of red marbles, red pyramids, and red cubes, and twice as many blue marbles as there are red ones. You reach in with your eyes closed and take out one item. Which of these best describes the probability of getting a blue marble: likely, unlikely, or roughly even chance? Justify your answer with an example or an explanation.

6. [1 pt] A bag contains 15 blue cubes and 14 red marbles. You will reach in and pull out ONE object. Is it necessary to add yellow pyramids to the bag to make it unlikely that you get a marble? If so, estimate how many, and either way, explain your reasoning.