Check Your Understanding – Probability

The table below identifies the key concepts from this unit.

1. Check your understanding by completing these questions.
2. Check your answers in the key provided.
3. In the table below, highlight the questions you got correct.
4. Ask peers/Dr. James about concepts where you can improve.

Key Concepts	 Mild	 Medium	 Spicy
Basic Probability	1, 2	3, 4	5, 6
Geometric Probability	7	8	9

1. You randomly pick one marble from a bag containing 11 red marbles, 3 blue marbles, and 8 yellow marbles. What is the probability that you pick a yellow marble?

2. You randomly pick one card from a standard deck of playing cards (without jokers). What is the probability that the card you pick is the 6 of diamonds?

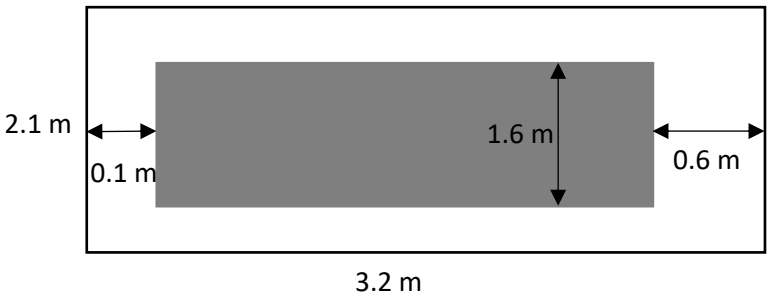
3. You flip a coin two times. What is the probability the coin lands on heads both times?

4. You spin a spinner, divided into 4 equal sections (red, blue, green, and yellow) and you flip a coin. What is the probability that the spinner lands on blue and the coin lands on heads?

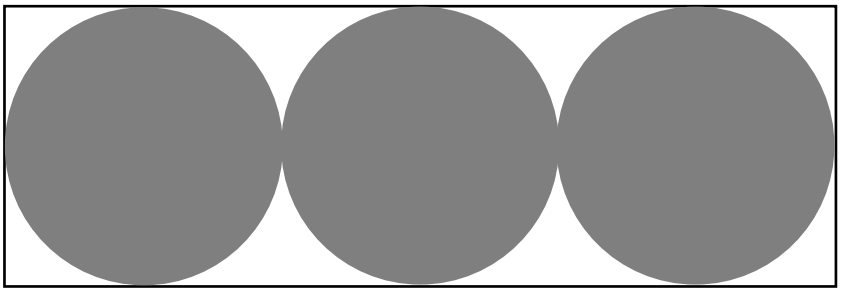
5. There are a certain number of marbles in a bag. The marbles are red, blue, and green. If you pick one marble at random, the probability that it will be red is $\frac{3}{8}$, the probability that it will be blue is 0.125, and the probability that it will be green is 50%. What is the fewest number of each color of marbles possible in the bag?

6. Dr. James has placed some of her small toy farm animals in a bag. She has told you that the bag contains the following animals: sheep, ducks, and cows. If you randomly pick one animal from the bag, the probability that it will be a sheep is $\frac{3}{11}$ and the probability that it will be a duck is 0.5. There are 5 cows in the bag. How many sheep and ducks are in the bag?

7. You randomly throw a dart at the target below. The dart hits the target. What is the probability that it hits the shaded area?

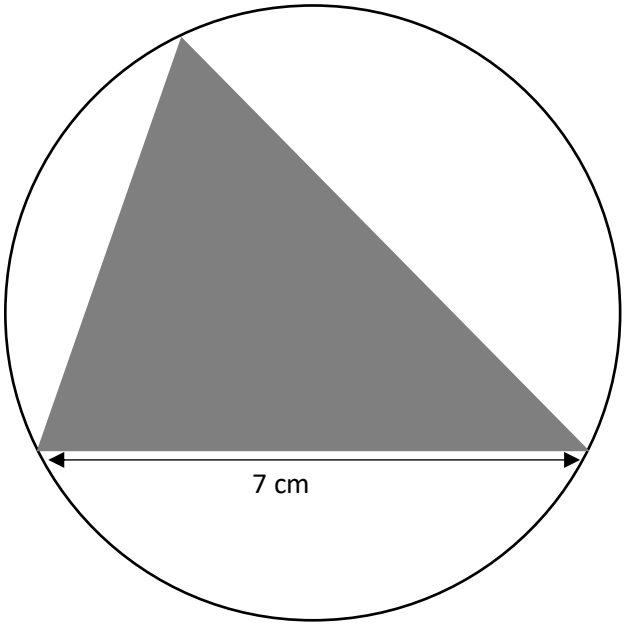


8. A target is made from three identical circles that fit perfectly within a rectangle. You randomly throw a dart at the target. The dart hits the target. What is the probability that it hits the shaded area?



14 mm

9. If you randomly throw a dart at the target below, the probably of hitting the shaded area is $\frac{2}{5}$. The diameter of the circle is 8 cm. What is the height of the triangle?



ANSWER KEY

1. $\frac{4}{11}$
2. $\frac{1}{52}$
3. $\frac{1}{4}$
4. $\frac{1}{8}$
5. **3 Red, 1 Blue, 4 Green**
6. **11 Ducks, 6 Sheep**
7. $\frac{25}{42}$
8. 78.5%
9. $h = 5.75\ cm$