✓ **Congratulations! You passed!**

TO PASS 75% or higher

[Keep Learning]

GRADE
100%

Practice quiz on Probability Concepts

TOTAL POINTS 9

---

1. If $x =$ "It is raining," what is $\sim (\sim x)$?   `1 / 1 point`

   ○ "It is never raining"

   ○ "It is always raining"

   ○ "It is not raining"

   ◉ "It is raining"

   > ✓ **Correct**
   > The second negation cancels out the first one.
   >
   > Similarly $\sim (\sim (\sim x)) = \sim x$

2. If the statement "I am 25 years old" is assigned probability 0, what probability is assigned to the statement   `1 / 1 point`
   "I am not 25 years old"?

   ○ Unknown

   ○ -1

   ◉ 1

   ○ 0

   > ✓ **Correct**
   > It is always the case that $p(x) + p(\sim x) = 1$.

3. If I assign to the statement x = "it will rain today" a probability of $p(x) = 0.35$, what probability must I   `1 / 1 point`
   assign to the statement "it will not rain today?"

   ○ .5

   ○ .35

   ○ 0

   ◉ .65

   > ✓ **Correct**
   > $p(x) + p(\sim x) = 1$

4. Is the following collection of statements a probability distribution?   `1 / 1 point`

   1. I own a Toyota pickup truck

   2. I do not own a Toyota pickup truck

   3. I own a non-Toyota pickup truck

   4. I do not own a non-Toyota pickup truck

   ◉ No

○ Yes

5. I don't know what it means to be "ingenuous." What probability would I assign to the statement, "I am ingenuous OR I am not ingenuous"?

1 / 1 point

◉ 1

○ -1

○ 0

○ .5

6. A friend of mine circumscribes a circle inside a square, so that the diameter of the circle and the edge of the square are the same length. He asks me to close my eyes and pick a point at random inside the square. He says the probability that my point will also be inside the circle is $\frac{\pi}{4}$

1 / 1 point

Is this correct?

◉ Yes

○ No

7. The probability of drawing a straight flush (including a Royal Flush) in a five-card poker hand is 0.0000153908

1 / 1 point

What is the probability of **not** drawing a straight flush?

○ .9996582672

○ .9967253809

○ .9999745688

◉ .9999846092

8. What is the probability that a fair, six-sided die will come up with a prime number? (Recall that prime numbers are positive integers other than 1 that are divisible only by themselves and 1)

1 / 1 point

◉ $\dfrac{1}{2}$

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

✓ **Correct**

The faces with 2, 3 and 5 satisfy the condition – which makes 3 relevant outcomes out of the "universe" of 6 outcomes = $\frac{3}{6} = \frac{1}{2}$

9. The joint probability p (the die will come up 5, the next card will be a heart) Is equal to the joint probability: **1 / 1 point**

- ○ p (the next card will **not** come up 5, the next card will be a heart)

- ● p (the next card will be a heart, the die will come up 5)

- ○ p (the die will **not** come up 5, the next card will **not** be a heart)

- ○ p (the next card will be a heart, the die will **not** come up 5)

✓ **Correct**

In joint probabilities, the order does not change the probability: $p(A, B) = p(B, A)$