1. If $x =$ "It is raining," what is $\sim (\sim x)$? **0 / 1 puntos**

- (●) "It is not raining"
- ( ) "It is never raining"
- ( ) "It is always raining"
- ( ) "It is raining"

! **Incorrecto**
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 "I am not 25 years old"? **1 / 1 puntos**

- (●) 1
- ( ) 0
- ( ) Unknown
- ( ) -1

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

- (●) $.65$
- ( ) 0
- ( ) $.5$
- ( ) $.35$

✓ **Correcto**
$p(x) + p(\sim x) = 1$

4. Is the following collection of statements a probability distribution? **1 / 1 puntos**

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

- ( ) Yes
- (●) No

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 puntos**

- ○ -1
- ○ .5
- ○ 0
- ◉ 1

✓ **Correcto**

It is always the case, regardless of the content of the statement x, that $p(x \text{ or } \sim x) = 1$

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 $\frac{\pi}{4}$ **0 / 1 puntos**

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 puntos**

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

- ○ $.9967253809$
- ○ $.9999745688$
- ○ $.9996582672$
- ◉ $.9999846092$

✓ **Correcto**

$p(\sim x) = 1 - p(x)$

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 puntos**

- ○ \begin {align}\frac{1}{3}\end {align}
- ◉ \begin {align} \frac{1}{2}\end {align}
- ○ \begin {align}\frac{2}{3}\end {align}
- ○ \begin {align} \frac{1}{6}\end {align}

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 puntos

- 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)