Practice quiz on the Number Line, including Inequalities

PUNTOS TOTALES DE 8

---

1. Which of the following real numbers is *not* an integer? **1 / 1 puntos**

   - ◉ 4.3
   - ○ 7
   - ○ 0
   - ○ −3

   > ✓ **Correcto**
   >
   > 4.3 is a decimal that is between two consecutive integers (4 and 5).

2. Which of the following is the absolute value $|-7|$ of the number -7? **1 / 1 puntos**

   - ○ −7
   - ○ 0
   - ◉ 7
   - ○ 1

   > ✓ **Correcto**
   >
   > The absolute value of a number x is the distance along the number line from x to 0. In this case, -7 is 7 units away from 0, and so $|-7| = 7$.

3. Suppose I tell you that x and y are two real numbers which make the statement $x < y$ true. Which pair of numbers *cannot* be values for x and y? **1 / 1 puntos**

   - ○ $x = 1$ and $y = 7.3$
   - ○ $x = -17.3$ and $y = -17.1$
   - ◉ $x = 5$ and $y = 3.3$
   - ○ $x = -1$ and $y = 0$

   > ✓ **Correcto**
   >
   > The statement $x < y$ means that x is to the left of y on the real number line. Since 5 is to the right of 3.3, these cannot be values for x and y.

4. Suppose I tell you that w is a real number which makes both of the following statements true: $w > 1$ and $w < 1.2$. Which of the following numbers could be w? **1 / 1 puntos**

   - ○ $w = 1.2$
   - ○ $w = 11$
   - ○ $w = 0$
   - ◉ $w = 1.05$

   > ✓ **Correcto**
   >
   > $1.05 > 1$ is true since 1.05 is to the right of 1 on the real number line, and $1.05 < 1.2$ is also true, since 1.05 is to the left of 1.2 on the real number line.

5. Suppose that x and y are two real numbers which satisfy $x + 3 = 4y + 1$. **Which of the following statements are false?**

○ $x = 4y - 2$

○ $2x + 6 = 8y + 2$

○ $x = 4y$

◉ $x + 2 = 4y$

> **! Incorrecto**
>
> If we subtract 1 from both sides of the given equation, we get this equation.

6. Which of the following real numbers is in the open interval $(2, 3)$?

○ 2

○ 1

○ 3

◉ 2.1

> **✓ Correcto**
>
> Recall that the open interval $(2, 3)$ consists of all real numbers x which satisfy $2 < x < 3$. Since $2.1 > 2$ and $2.1 < 3$, the number 2.1 is in this open interval.

7. Which of the following real numbers are in the open ray $(3.1, \infty)$?

○ 0

○ 3.1

◉ 4.75

○ -5

> **✓ Correcto**
>
> Recall that $(3.1, \infty) = \{x \in \mathbb{R} \mid x > 3.1\}$. Since $4.75 > 3.1$ is true, $4.75 \in (3.1, \infty)$.

8. Which of the following values for x solves the equation $-3x + 2 = -4$

◉ $x = 2$

○ All values of x such that $x \leq 2$

○ $x = -2$

○ $x = \dfrac{2}{3}$

> **✓ Correcto**
>
> First we subtract 2 from both sides of the given equation, to obtain $-3x = -6$. Finally, to isolate x we divide both sides of the equation by -3 to obtain $x = 2$.