Practice quiz on the Number Line, including Inequalities

TOTAL POINTS 8

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

- (•) 4.3
- ( ) 7
- ( ) -3
- ( ) 0

✓ **Correct**
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 point**

- ( ) 0
- ( ) -7
- ( ) 1
- (•) 7

✓ **Correct**
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 point**

- (•) $x = 5$ and $y = 3.3$
- ( ) $x = 1$ and $y = 7.3$
- ( ) $x = -1$ and $y = 0$
- ( ) $x = -17.3$ and $y = -17.1$

✓ **Correct**
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 point**

- (•) $w = 1.05$
- ( ) $w = 11$
- ( ) $w = 0$
- ( ) $w = 1.2$

✓ **Correct**

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

- (●) $x=4y$
- ( ) $x=4y-2$
- ( ) $x+2=4y$
- ( ) $2x+6=8y+2$

✓ **Correct**
The equation $x=4y$ cannot be derived from the given equation.

6. Which of the following real numbers is in the open interval $(2,3)$? 1 / 1 point

- ( ) 3
- (●) 2.1
- ( ) 1
- ( ) 2

✓ **Correct**
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 $(3.1,\infty)$? 1 / 1 point

- ( ) 0
- ( ) 3.1
- (●) 4.75
- ( ) -5

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

8. Which of the following values for x solves the equation $-3x+2=-4$ 1 / 1 point

- ( ) $x=-2$
- ( ) All values of x such that $x\leq 2$
- (●) $x=2$
- ( ) $x=\frac{2}{3}$

✓ **Correct**
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 $x=2$.