**Congratulations! You passed!**
**TO PASS** 75% or higher

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**GRADE**
100%

# 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

- $7$
- $-3$
- $0$
- $4.3$

**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

- $-7$
- $7$
- $1$
- $0$

**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

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

**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

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

**Correct**
$1.05 > 1$ 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?** 1 / 1 point

- $x + 2 = 4y$
- $x = 4y - 2$
- $x = 4y$
- $2x + 6 = 8y + 2$

**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

- $1$
- $2.1$
- $2$
- $3$

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

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

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

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 $x = 2$.