Assignment 6

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1. Define a relation $\sim$ on $\mathbb{N} \times \mathbb{N}$ as follows: $(m, n) \sim (p, q)$ if $m + q = n + p$. Which of the following ordered pairs is in the odd one out with respect to the relation $\sim$?
   - $(0, 0)$
   - $(1, 1)$
   - $(2, 2)$
   - $(3, 3)$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   
2. Define a relation $\equiv$ on $\mathbb{Z} \times \{0\}$ as follows: $(a, b) \equiv (c, d)$ if $ad = bc$. Which of the following ordered pairs of integers is the odd one out with respect to the relation $\equiv$?
   - $(0, 1)$
   - $(1, 2)$
   - $(2, 4)$
   - $(3, 6)$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   
3. Define a relation $\equiv$ on $\mathbb{Z} \times \{0\}$ as follows: $(a, b) \equiv (c, d)$ if $ad = bc$. Which of the following ordered pairs of integers belongs to the sum of $\{0, 1\}$ and $\{3, -4\}$?
   - $(-7, 8)$
   - $(-15, 10)$
   - $(10, -6)$
   - $(17, 20)$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:

4. Which of the following sets are uncountable?
   - The set of all rational numbers in $[0, 1]$
   - The set of all ordered pairs of rational numbers in $[0, 1]^2$
   - The set of all real numbers in $[0, 1]$
   - The set of all ordered pairs of real numbers in $[0, 1]^2$

   Only $P$.
   No, the answer is incorrect.
   Score: 0
   Accepted Answers: only $P$.

5. Which of the following does not belong to the Dedekind cut corresponding to $\sqrt{2}$?
   - $\{a \in \mathbb{Q} : a < \sqrt{2}\}$
   - $\{a \in \mathbb{Q} : a > \sqrt{2}\}$
   - $\{a \in \mathbb{Q} : a < \sqrt{2} \text{ and } a \notin \mathbb{Q}\}$
   - $\{a \in \mathbb{Q} : a \geq \sqrt{2} \}$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: $\{a \in \mathbb{Q} : a \geq \sqrt{2} \}$.

6. GCD of $34048$ and $43228$ is not equal to
   - GCD of $18884$ and $21664$
   - GCD of $5718$ and $10968$
   - GCD of $9578$ and $5706$
   - GCD of $1922$ and $5706$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: GCD of $5718$ and $10968$.

7. Ordered pair of integers $(a, b)$ so that $43028 = 24104 + 9b$ is the GCD of $24104$ and $43028$ is
   - $(0, 5)$
   - $(1, 4)$
   - $(2, 3)$
   - $(3, 2)$

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: $(0, 5)$.

8. Which of the following sets is not equivalent to a proper subset of itself?
   - The set of all natural numbers that are prime or even
   - The set of all natural numbers that are greater than $100$
   - The set of all natural numbers that are prime and even
   - The set of all natural numbers that are prime and odd

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: the set of all natural numbers that are prime and even.