Name: Richard

QUIZ 1

MATH 300
August 22, 2024

1. Write this set by listing its elements between braces: $\{x^2+1 : x \in \mathbb{Z},\ -1 \le x \le 2\}$

$\{2, 1, 5\}$

2. Express the set $X = \{\ldots, -10, -5, 0, 5, 10, 15, 20, \ldots\}$ in set-builder notation.

$\{5x : x \in \mathbb{Z}\}$

3. If $A = \{x \in \mathbb{Z} : x^2 < 10\}$, then $|A| =$

$A = \{-3, -2, -1, 0, 1, 2, 3\}$

Therefore $|A| = 7$

4. Find the cardinality of the set $B = \Big\{\{1,3\}, \{\{3,5,7\},\{6\}\}, \emptyset, 8, \{8\}\Big\}$.

$|B| = 5$

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QUIZ 1

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1. Write this set by listing its elements between braces: $\{x \in \mathbb{Z} : |2x| < 5\}$

$\{-2, -1, 0, 1, 2\}$

2. Express the set $X = \{\ldots, \frac{1}{8}, \frac{1}{4}, \frac{1}{2}, 1, 2, 4, 8, \ldots\}$ in set-builder notation.

$\{2^n : n \in \mathbb{Z}\}$

3. If $A = \{x \in \mathbb{Z} : 1 \leq x^2 \leq 4\}$, then $|A| =$

$A = \{-2, -1, 1, 2\}$

Therefore $|A| = 4$

4. Find the cardinality of the set $B = \Big\{\{\{1,4\}, a, b, \{3,4\}, \{\emptyset\}\}\Big\}$.

$|B| = 1$