Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y) \in \mathbb{R}^2 \ : \ y = x^2 - 4\}$

$B = \{(p, q) \in \mathbb{Z}^2 \ : q < 0\}$

$C = \{(a, b) \in \mathbb{R}^2 \ : \ |a| \leq 1\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y, z) \in \mathbb{R}^3 \mid 0 < x < y - 1\}$

$B = \{(a, b, c) \in \mathbb{R}^3 \mid b^2 + 2 < c^2\}$

$C = \{(p, q, r) \in \mathbb{R}^3 \mid p^2 < r^2\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{\alpha(2,-4) + (1-\alpha)(-3,6)) \mid \alpha \in \mathbb{R}\}$

$B = \{(a,b) \in \mathbb{R}^2 \mid a \geq 1\}$

$C = \{(p,q) \in \mathbb{R}^2 \mid q \leq 0\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y) \in \mathbb{R}^2 \ : \ y = x^2 - 2x - 1\}$

$B = \{(p, q) \in \mathbb{R}^2 \ : \ |p| \geq 3\}$

$C = \{(m, n) \in \mathbb{R}^2 \ : \ n \geq 0\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y, z) \in \mathbb{R}^3 \ : y = x^2 - 2x + 11\}$

$B = \{(a, b, c) \in \mathbb{R}^3 \ : \ b \leq c\}$

$C = \{(p, q, r) \in \mathbb{R}^3 \ : \ r \geq 5\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y, z) \in \mathbb{R}^3 \ : \ |x + y + z| = 20\}$

$B = \{(a, b, c) \in \mathbb{N}^3 \ : \ a + b < 5\}$

$C = \{(p, q, r) \in \mathbb{R}^3 \ : \ r > 10\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{(x, y) \in \mathbb{R}^2 \ : \ xy \leq -7\}$

$B = \{(p^3, p^2) \ : \ p \in \mathbb{R}\}$

$C = \{(a, b) \in \mathbb{R}^2 \ : \ a < 0\}$

Prove that $A \cap B \subseteq C$.

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

$A = \{a(1,0) + b(3,1) + c(2,4) \ : \ a, b, c \text{ are positive reals and } a + b + c = 1\}$

$B = \{(x, y) \in \mathbb{R}^2 \ : \ x \leq 3 \text{ and } y \geq 0\}$

Prove that $A \subseteq B$.