

Name:\_\_\_\_\_

NetID:\_\_\_\_\_ Lecture:    A    B

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

$$A = \{(x, y) \in \mathbb{Z}^2 \mid 2xy + 6y - 5x - 15 \geq 0\}$$

$$B = \{(a, b) \in \mathbb{Z}^2 \mid a \geq 0\}$$

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

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

Name:\_\_\_\_\_

NetID:\_\_\_\_\_ Lecture:      A      B

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

$$A = \{\alpha(2, -4) + (1 - \alpha)(-2, 5) \mid \alpha \in \mathbb{R}\}$$

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

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

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

Name:\_\_\_\_\_

NetID:\_\_\_\_\_ Lecture:    A    B

Discussion:    Thursday    Friday    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  $A \subseteq B$ .

Name:\_\_\_\_\_

NetID:\_\_\_\_\_ Lecture:    A    B

Discussion:    Thursday    Friday    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    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  $A \cap B \subseteq C$ .