Math−0362
Unit 3 Test REVIEW

Name_____

MULTIPLE CHOICE. Choose the one alternative that best answers the question.

Identify the domain and range of the relation, and determine whether the relation is a function.

1) {(-4, -18), (-1, -7), (4, 9), (9, 18)} 1) _____

A) Domain: {-4, -1, 4, 9}; Range: {-18, -7, 9, 18}; Function
B) Domain: {-18, -7, 9, 18}; Range: {-4, -1, 4, 9}; Function
C) Domain: {-4, -1, 4, 9}; Range: {-18, -7, 9, 18}; Not a function
D) Domain: {-18, -7, 9, 18}; Range: {-4, -1, 4, 9}; Not a function

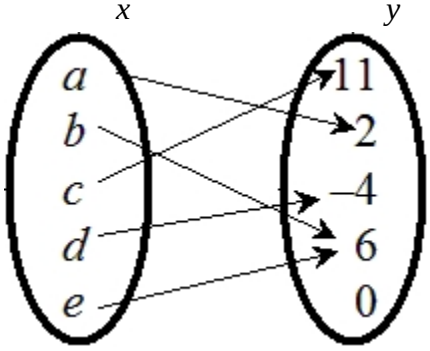
Determine whether the relation is also a function.

2) {(−6, −3), (−1, 7), (3, 6), (3, 1)} 2) _____

A) yes B) no

Determine whether the relation defines *y* as a function of *x*.

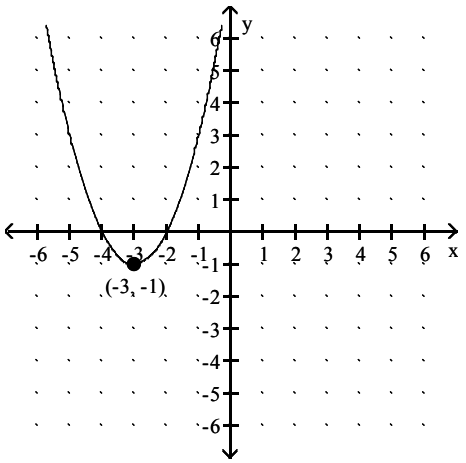
3) 3) _____



A) Function B) Not a function

Find the domain and range of the function graphed.

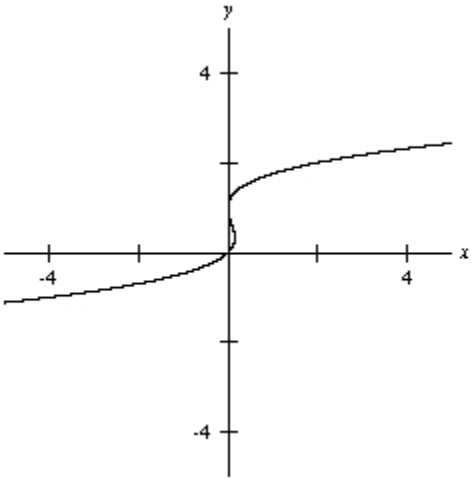
4) 4) _____



A) domain: [-3, ∞); range: [-1, ∞)
B) domain: (−∞, ∞); range: (−∞, ∞)
C) domain: (−∞, -3) ∪ (-3, ∞); range: (−∞, -1) ∪ (-1, ∞)
D) domain: (−∞, ∞); range: [-1, ∞)

Determine whether the graph below the graph of a function.

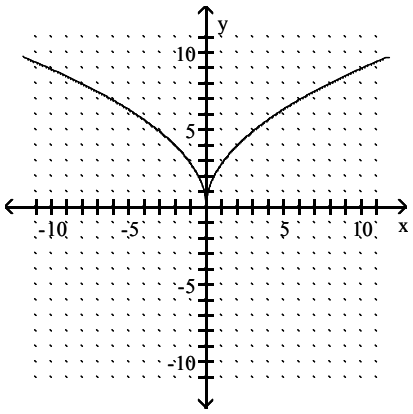
5) 5) _____



A) Yes B) No

Determine whether the graph is the graph of a function.

6) 6) _____



A) yes B) no

Evaluate the function.

7) Find f(−11) when f(x) = 8x − 9 7) _____

A) −97 B) −96 C) 11 D) −79

Evaluate as indicated.

8) If $z(t) = 2t^2 + 7t - 4$, find $z(-1)$ and $z(5)$. 8) _____

A) $z(-1) = -13$; $z(5) = 81$ B) $z(-1) = 5$; $z(5) = 53$
C) $z(-1) = -7$; $z(5) = 131$ D) $z(-1) = -9$; $z(5) = 81$

Determine if the given point is a solution to the system.

9) (5, -6) 9) _____

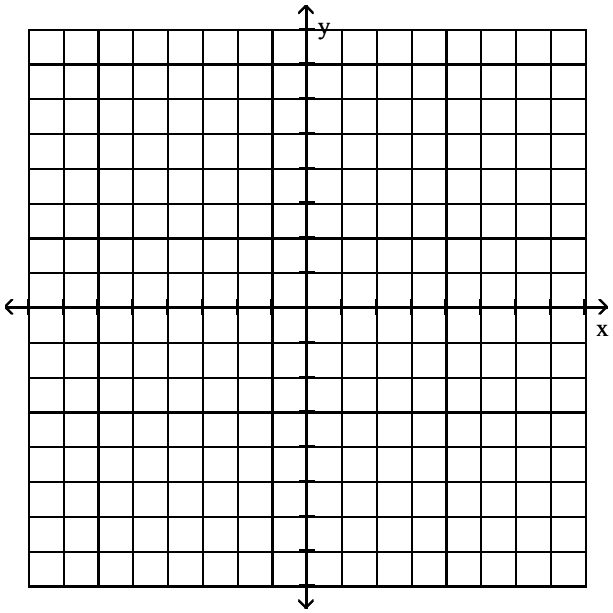
$3x - 4y = 39$
$8x + 5y = 12$

A) Yes B) No

Solve the system by graphing.

10) $3x - 2y = 2$ 10) _____

$x + y = -6$



A) (-2, -4) B) (-4, -2) C) (0, -1) D) (14, - 20)

Solve the system by substitution.

11) $y = 1 - 4x$ 11) _____

$3x + 3y = -6$

A) (-3, 0) B) (1, -3) C) (-1, 1) D) (-3, 1)

12) $-10x - 2y = 13$ 12) _____

$5x + y = -6$

A) ∅

B) (0, -6)

C) (1, -11)

D) Infinite number of solutions of the form $\{(x, y) \mid 5x + y = -6\}$

Solve the system of equations by the substitution method.

13) $\begin{cases} 2x + y = 8 \\ 8x + 4y = 32 \end{cases}$ 13) _____

A) no solution
B) (0, 8)
C) (5, −2)
D) infinite number of solutions

Solve the system using the elimination method.

14) $9x + 7y = 25$
$2x - y = 26$ 14) _____

A) (0, -26)
B) Infinite number of solutions of the form $\{(x, y) \mid 9x + 7y = 25\}$
C) ∅
D) (9, -8)

15) $5x - y = -3$
$-10x + 2y = 6$ 15) _____

A) ∅
B) Infinite number of solutions of the form $\{(x, y) \mid 5x - y = -3\}$
C) $\left(-\frac{3}{5}, 0\right)$
D) (0, 3)

Solve the equation.

16) $|8c + 2| = 4$ 16) _____

A) $\left\{-\frac{3}{4}, \frac{1}{4}\right\}$ B) $\left\{-\frac{1}{4}, \frac{1}{4}\right\}$ C) $\left\{\frac{1}{4}\right\}$ D) ∅

17) $|b + 11| - 5 = -1$ 17) _____

A) {-15, -7} B) {-7} C) ∅ D) {-7, 7}

18) $|6p - 1| = -9$ 18) _____

A) $\left\{-\frac{4}{3}\right\}$ B) $\left\{-\frac{4}{3}, \frac{5}{3}\right\}$ C) $\left\{-\frac{5}{3}, \frac{5}{3}\right\}$ D) ∅

19) $|3r + 2| = |6r - 20|$ 19) _____

A) $\left\{2, \frac{22}{3}\right\}$ B) $\left\{\frac{22}{3}\right\}$ C) $\left\{-\frac{22}{3}, \frac{22}{3}\right\}$ D) ∅

Solve the inequality. Write the solution set in interval notation.

20) $|x + 14| \leq 16$ 20) _____

A) (-2, 2) B) [-30, 2]
C) (-2, 30) D) $[-\infty, -30] \cup [2, \infty]$

21) $|6x - 3| - 2 < 9$ 21) _____

A) $\left(-\infty, -\frac{2}{3}\right) \cup \left(\frac{7}{3}, \infty\right)$ B) $\left(-\infty, -\frac{4}{3}\right) \cup \left(\frac{7}{3}, \infty\right)$
C) $\left(-\frac{2}{3}, \frac{7}{3}\right)$ D) $\left(-\frac{4}{3}, \frac{7}{3}\right)$

22) $|4w - 7| \geq 5$ 22) _____

A) $(-\infty, -3] \cup \left[-\frac{1}{2}, \infty\right)$

B) $\left[\frac{1}{2}, 3\right]$

C) $\left(-\infty, \frac{1}{2}\right] \cup [3, \infty)$

D) $\left[-3, -\frac{1}{2}\right]$

Solve the inequality. Graph the solution set and write the solution set in interval notation.

23) $|2b - 13| \geq -15$ 23) _____

A)

{ }

B)

[-1, 14]

C)

$(-\infty, -1] \cup [14, \infty)$

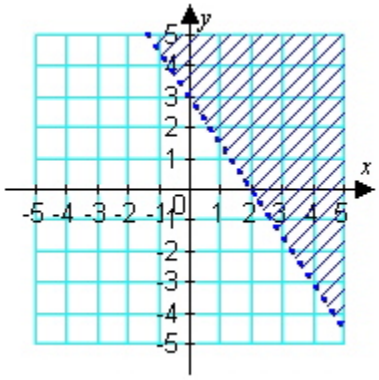
D)

$(-\infty, \infty)$

Graph the inequality.

24) $18x + 12y \geq 36$ 24) _____

A)



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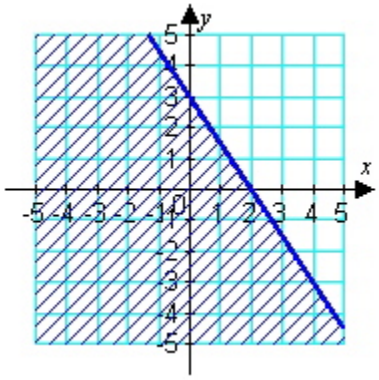

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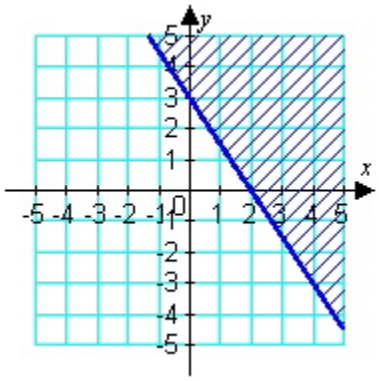

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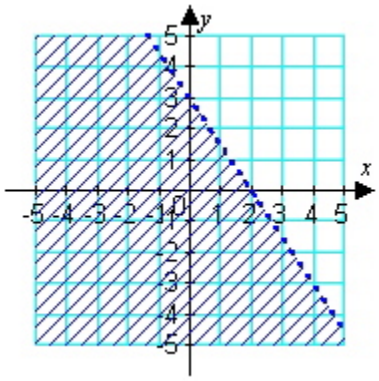
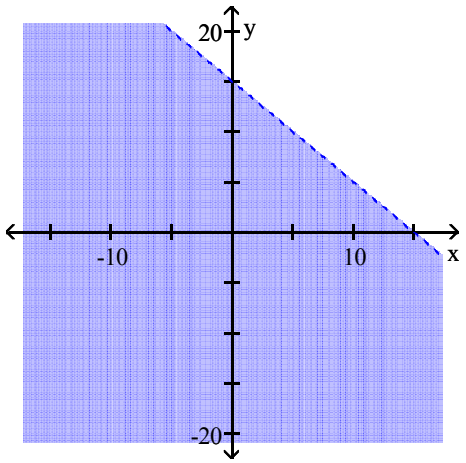


25) $y + x \leq 15$ 25) _____

A)



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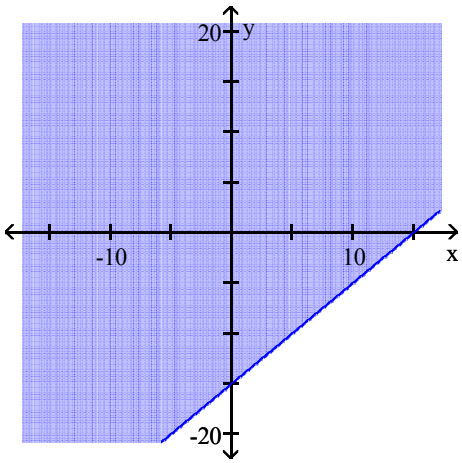

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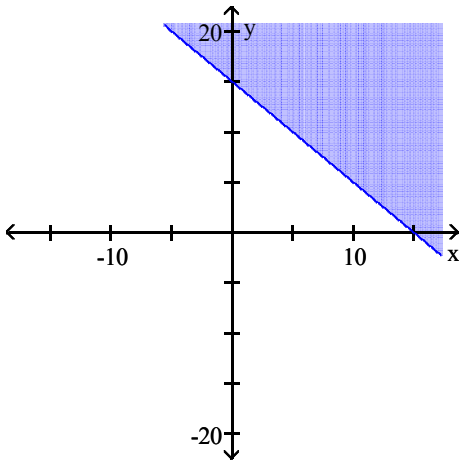

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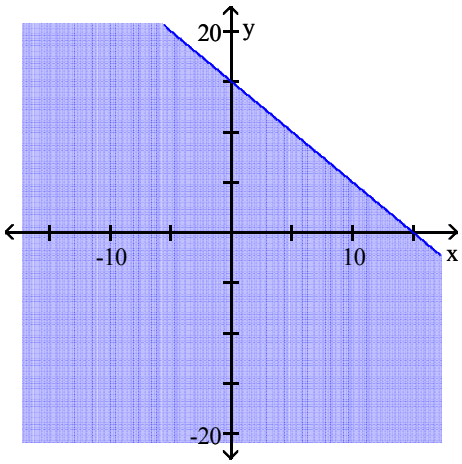
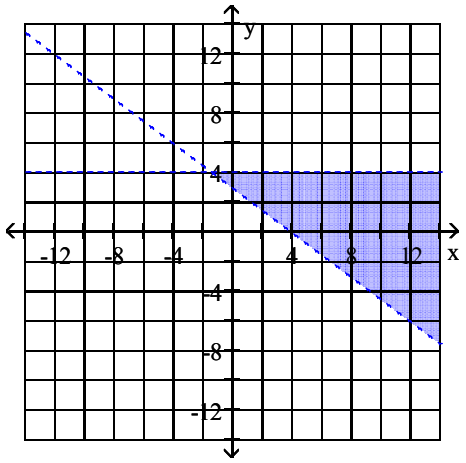


Graph the compound inequality.

26) $3x + 4y < 12$ and $y < -4$ 26) _____

A)



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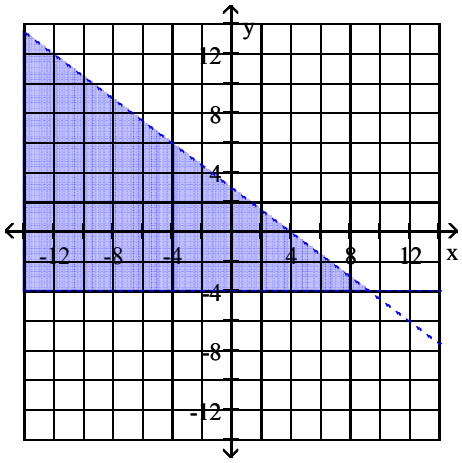

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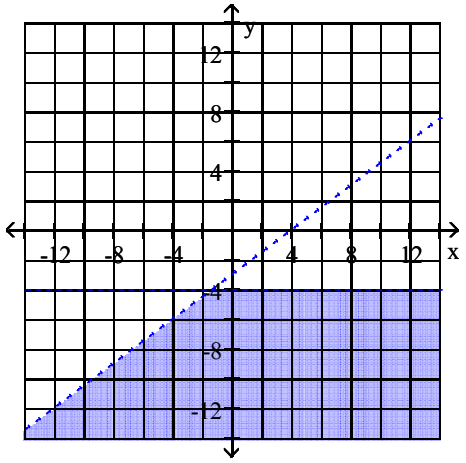

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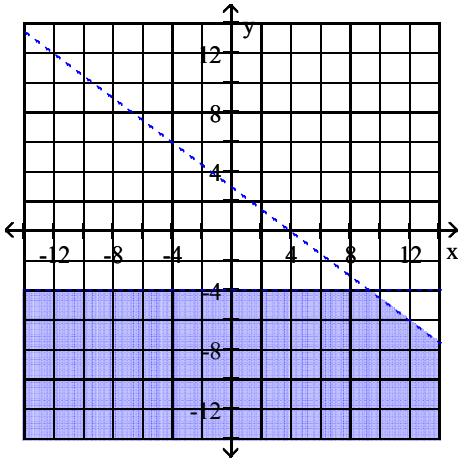
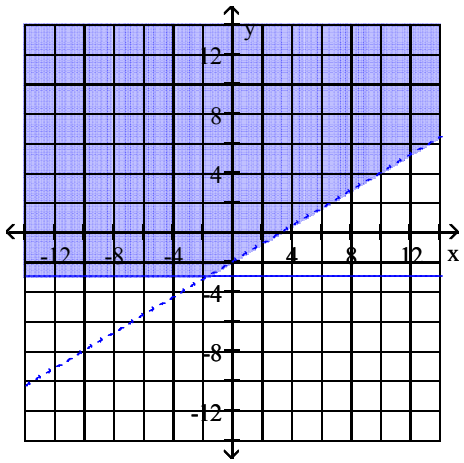


27) $y < \frac{3}{5}x - 2$ and $y \geq -3$ 27) _____

A)



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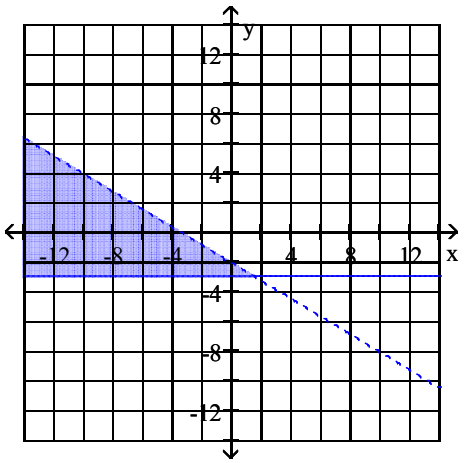

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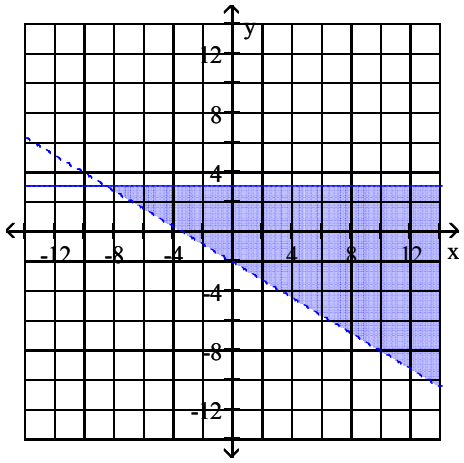
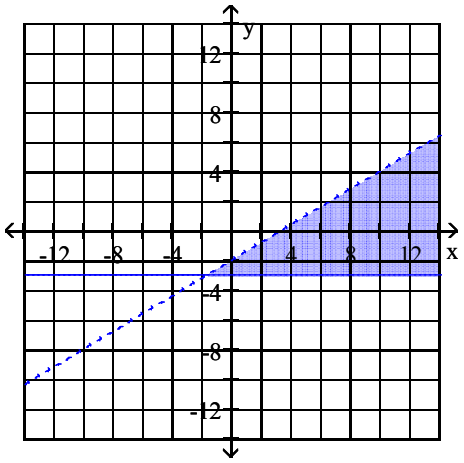
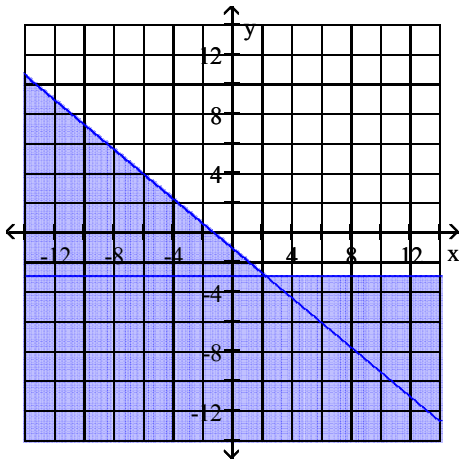


D)



28) $y \geq -\frac{5}{6}x - 1$ or $y \geq -3$ 28) _____

A)



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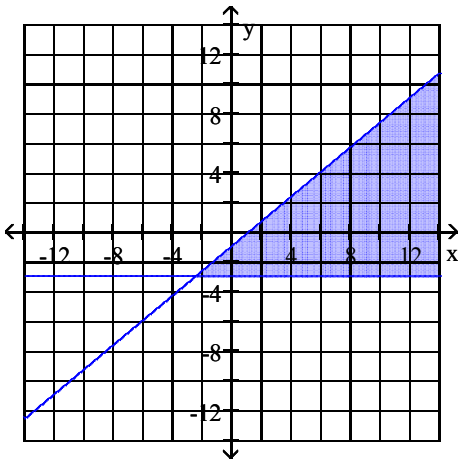
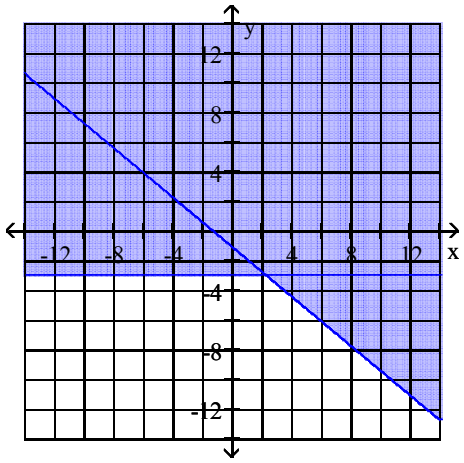
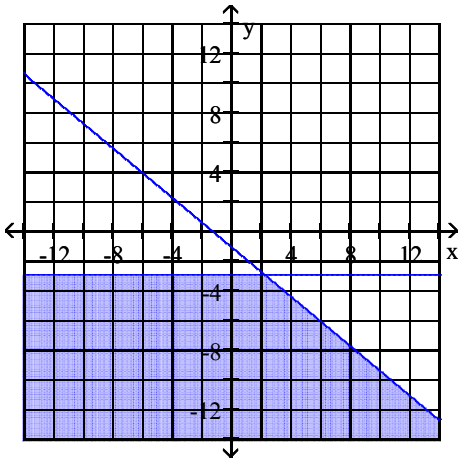


C)

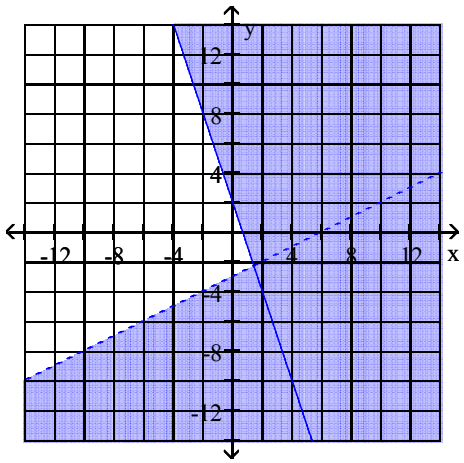


D)

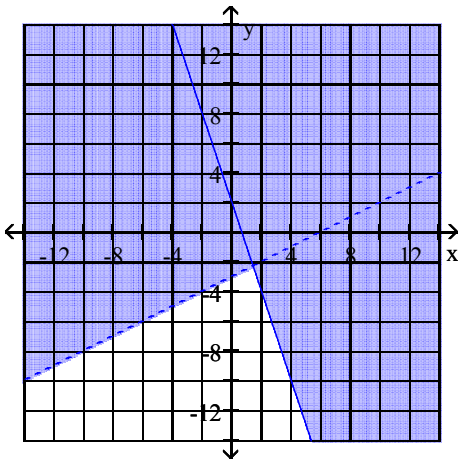


29) $y > \frac{1}{2}x - 3$ or $3x + y \geq 2$ 29) _____

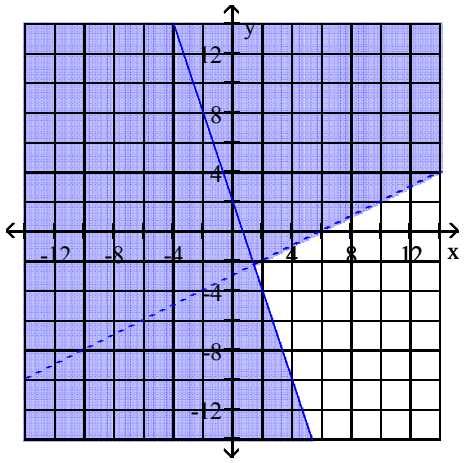
A)



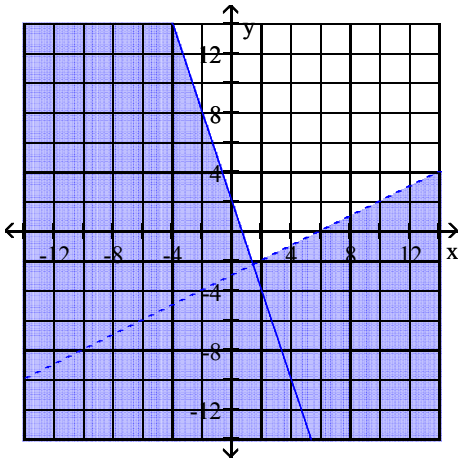
B)



C)



D)



1) A
2) B
3) A
4) D
5) B
6) A
7) A
8) D
9) B
10) A
11) B
12) A
13) D
14) D
15) B
16) A
17) A
18) D
19) A
20) B
21) D
22) C
23) D
24) C
25) D
26) D
27) D
28) C
29) B