

Math 100 Review 3

List the elements of the set.

1) If $A = \{x \mid x \text{ is an even integer}\}$ and $B = \{49, 51, 53, 55\}$, list the elements of $A \cap B$.

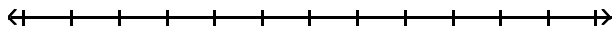
- A) $\{\}$
- B) $\{49, 51, 53, 55\}$
- C) $\{x \mid x \text{ is an even integer}\}$
- D) $\{x \mid x \text{ is an even integer or } x = 49 \text{ or } x = 51 \text{ or } x = 53 \text{ or } x = 55\}$

2) If $A = \{13, 14, 15, 18\}$ and $B = \{11, 13, 14, 16\}$, list the elements of $A \cap B$.

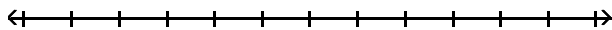
- A) $\{13, 14\}$
- B) $\{11, 13, 14, 15, 16, 18\}$
- C) $\{\}$
- D) $\{11, 15, 16, 18\}$

Solve the compound inequality. Graph the solution set.

3) $x \leq 2$ and $x \geq 1$



4) $-8x > -40$ and $x + 8 > 10$



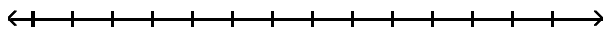
List the elements of the set.

5) If $A = \{11, 12, 13, 16\}$ and $B = \{9, 11, 12, 14\}$, list the elements of $A \cup B$.

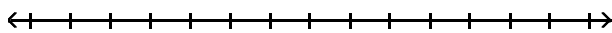
6) If $A = \{x \mid x \text{ is an odd integer}\}$ and $B = \{x \mid x \text{ is an even integer}\}$, list the elements of $A \cup B$.

Solve the compound inequality. Graph the solution set.

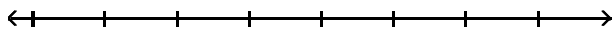
7) $x \leq 2$ or $x \geq 8$



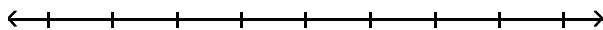
8) $x > 4$ or $x < 4$



9) $12x - 8 < 4x$ or $-3x \leq -9$

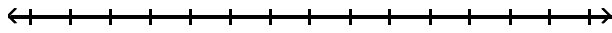


10) $-7x + 1 \geq 15$ or $4x + 3 \geq -13$

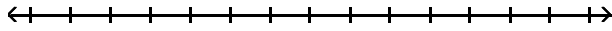


Solve the inequality. Graph the solution set.

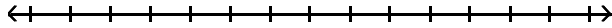
11) $|x| < 3$



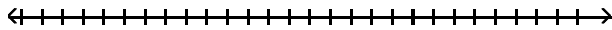
12) $|6k + 9| \leq 8$



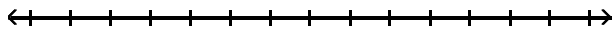
13) $|7k - 7| < -5$



14) $|x| + 1 \geq 13$

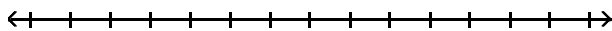


15) $|4k - 1| > -6$



16) $|x - 5| > 12$

17) $|3k + 6| - 3 < 4$



Solve the absolute value equation.

18) $|6x + 3| + 10 = 6$

19) $|7x + 6| = |x - 3|$

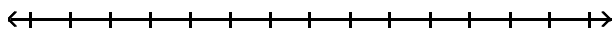
20) $|8x| + 6 = 9$

21) $|2x + 5| = 9$

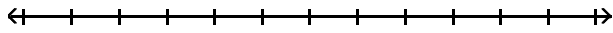
22) $|x - 8| = 3$

Solve the compound inequality. Graph the solution set.

23) $19 \leq 5t - 1 \leq 24$



24) $x \leq -1$ and $x \leq -2$

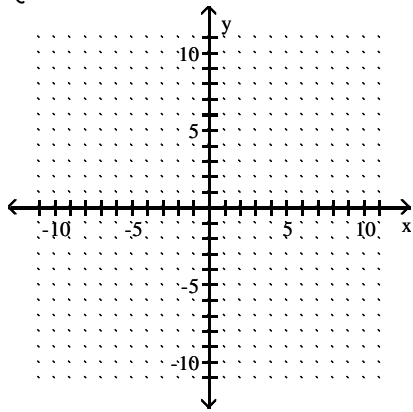


Determine whether the ordered pair given is a solution of the linear inequality in two variables.

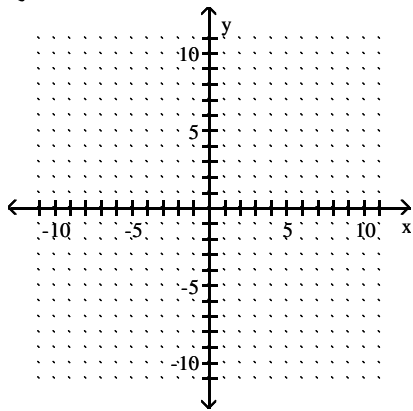
25) $x - y \leq 6$; $(-1, -10)$

Graph the solution of the system of linear inequalities.

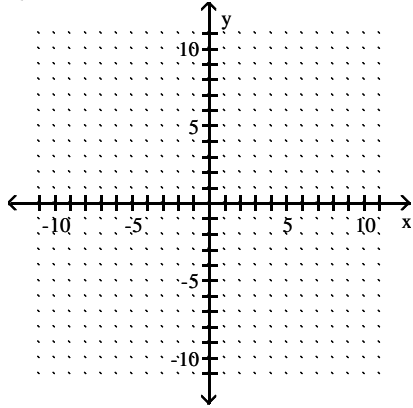
26)
$$\begin{cases} y < 3x + 3 \\ y > 3x - 1 \end{cases}$$



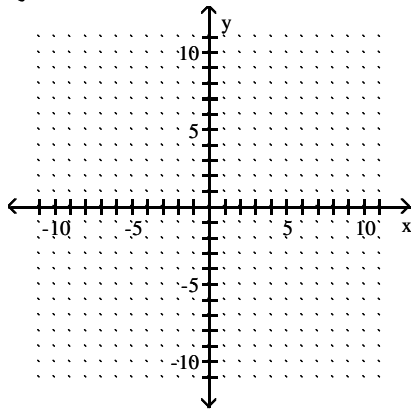
27)
$$\begin{cases} y > 4 \\ x \geq -4 \end{cases}$$



$$28) \begin{cases} y < 3x + 6 \\ y \geq -x + 8 \end{cases}$$

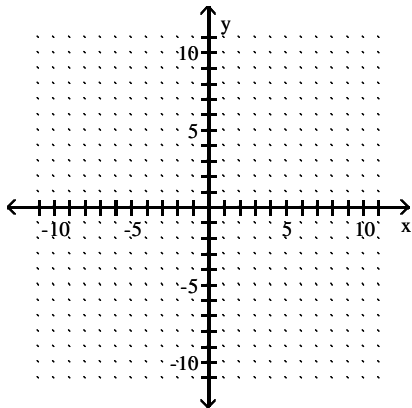


$$29) \begin{cases} y \geq x + 8 \\ y \geq 5 - x \end{cases}$$

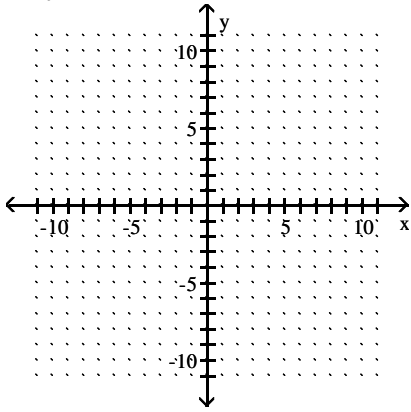


Graph the inequality.

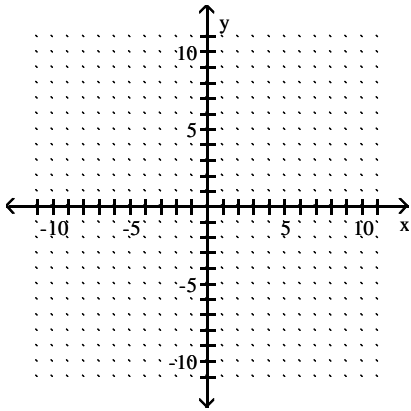
$$30) x > 9$$



31) $x - y > -3$



32) $x + y \leq -5$



Determine whether the ordered pair given is a solution of the linear inequality in two variables.

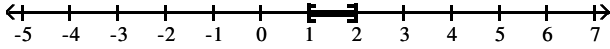
33) $x + 2y > -3$; $(-3, 1)$

34) $x \leq y - 1$; $(-5, -6)$

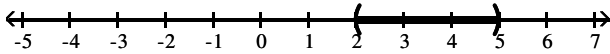
Answer Key

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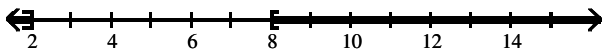
- 1) A
- 2) A
- 3) [1, 2]



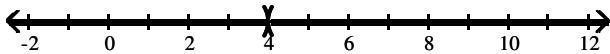
- 4) (2, 5)



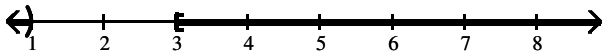
- 5) {9, 11, 12, 13, 14, 16}
- 6) {x | x is an integer}
- 7) $(-\infty, 2] \cup [8, \infty)$



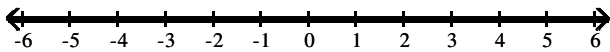
- 8) $(-\infty, 4) \cup (4, \infty)$



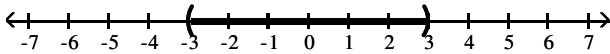
- 9) $(-\infty, 1) \cup [3, \infty)$



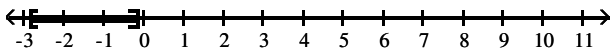
- 10) $(-\infty, \infty)$



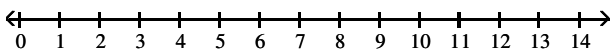
- 11) (-3, 3)



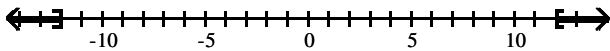
- 12) $\left[-\frac{17}{6}, -\frac{1}{6}\right]$



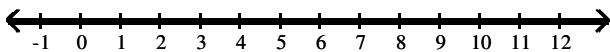
- 13) \emptyset



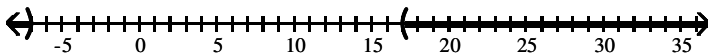
- 14) $(-\infty, -12] \cup [12, \infty)$



- 15) $(-\infty, \infty)$



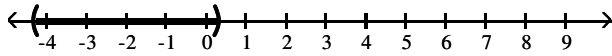
- 16) $(-\infty, -7) \cup (17, \infty)$



Answer Key

Testname: MTH100R3SUM2010

17) $\left(-\frac{13}{3}, \frac{1}{3}\right)$



18) \emptyset

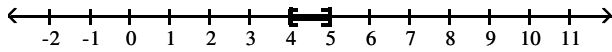
19) $-\frac{3}{2}, -\frac{3}{8}$

20) $\frac{3}{8}, -\frac{3}{8}$

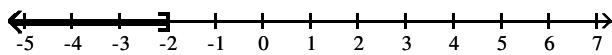
21) $2, -7$

22) $5, 11$

23) $[4, 5]$

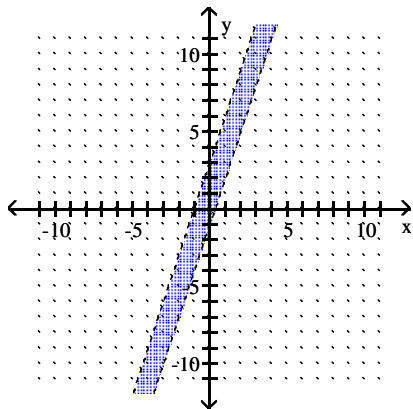


24) $(-\infty, -2]$

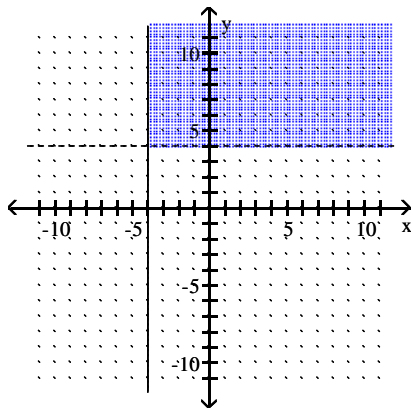


25) No

26)



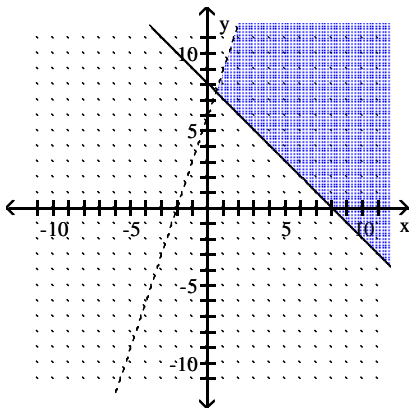
27)



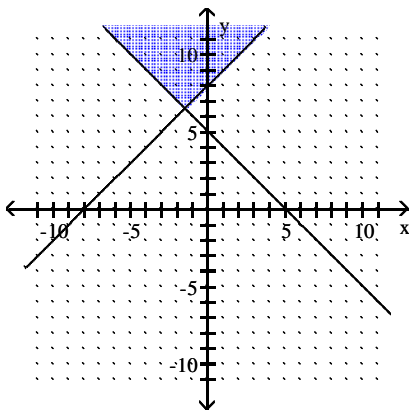
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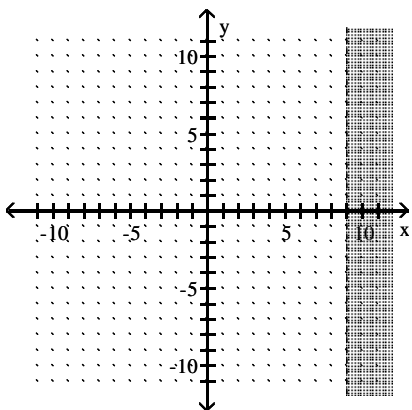
28)



29)



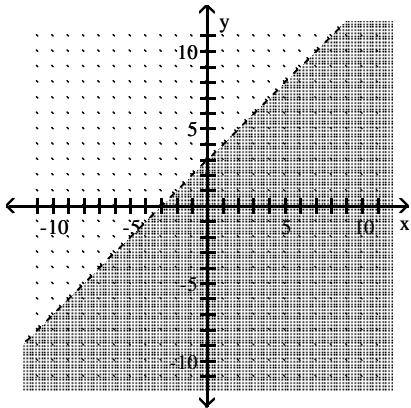
30)



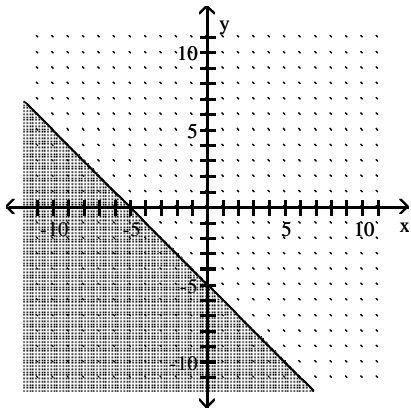
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31)



32)



33) Yes

34) No