

**Student:** yaser almohaws  
**Submitted:** 12/27/14 12:58am

**Instructor:** fahad aljabr  
**Course:** MATH-001: Fundamentals of Math 11415  
**Book:** Bittinger: Introductory and Intermediate Algebra, 4e

**Assignment:** Graded Homework 11

1. Solve.

$$-2 < x + 3 < 14$$

The solution is  $\{x \mid -5 < x < 11\}$ .

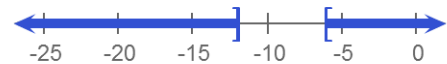
2. Solve and graph the compound inequality.

$$x + 7 < -5 \text{ or } x + 7 > 1$$

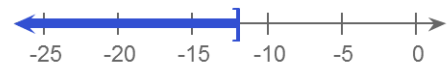
The solution of the compound inequality is  $\{x \mid x < -12 \text{ or } x > -6\}$ .

Which of the following is the graph of the solution of the compound inequality?

A.



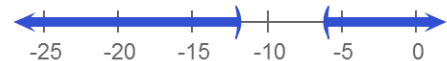
B.



C.



D.



3. Solve.

$$4x - \frac{4}{18} \leq \frac{5}{18} + 3x$$

The solution is  $\left\{x \mid x \leq \frac{1}{2}\right\}$ .

(Simplify your answer. Type an inequality symbol; then type an integer or a fraction.)

4. Solve.

$$2(5y - 4) \geq 5(3y + 7)$$

Use set-builder notation to describe the complete solution.

$\left\{y \mid y \leq -\frac{43}{5}\right\}$

(Simplify your answer. Type an inequality symbol; then type an integer or a fraction.)

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5. Solve and graph.

$$3x + 14 \geq 11 \text{ and } 3x - 15 \geq -3$$

The solution is  $\{x \mid x \geq 4\}$ .

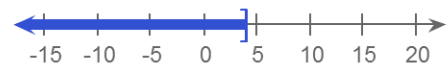
(Simplify your answer.)

Which of the following is the graph of the solution?

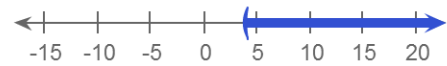
A.



B.



C.



6. Graph and write in interval notation.

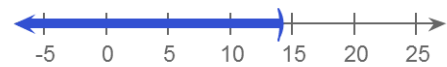
$$2 < x < 14$$

Choose the graph of the solution.

A.



B.



C.



D.



The solution in interval notation is  $(2, 14)$ .

7. Solve.

$$-8x \geq -6.4$$

The solution is  $\{x \mid x \leq 0.8\}$ .

(Simplify your answer. Type an inequality symbol; then type an integer or a decimal.)

8. The equation  $P = 1 + \frac{d}{33}$  gives the pressure,  $P$ , in atmospheres (atm) at a depth of  $d$  feet in the sea. For what depths  $d$  is the pressure at least 1 atm and at most 4 atm?

The solution is  $\{d \mid 0 \text{ ft} \leq d \leq 99 \text{ ft}\}$ .

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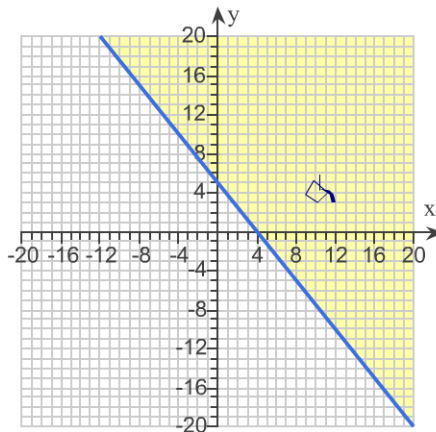
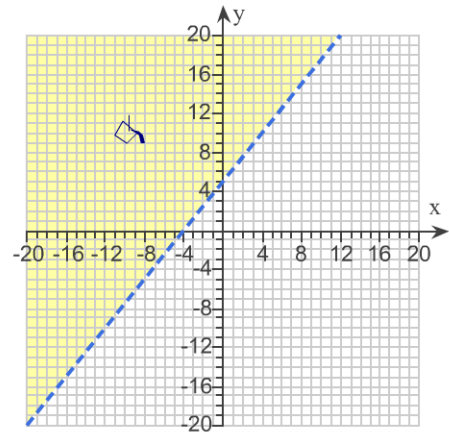
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9. Graph the inequality on a plane.

$$4y - 5x > 20$$

Use the graphing tool on the right to graph the inequality.



YOU ANSWERED:

10. Solve the compound inequality.

$$3x - 3 > -6 \text{ or } 4x + 9 \leq 13$$

Which of the following represents the solution of the compound inequality?

- A.  $\{x \mid x > -1\}$
- B.  $\{x \mid x \leq 1\}$
- C. All real numbers
- D.  $\emptyset$

YOU ANSWERED: D

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11. Solve.

$$|7x - 7| = -16$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is  $\{\}$ .  
(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- B. The solution set is the empty set.

YOU ANSWERED: A

12. Graph the system of inequalities. Find the coordinates of any vertices formed.

$$\begin{aligned}x + y &\leq 1 \\x - y &\leq 10\end{aligned}$$

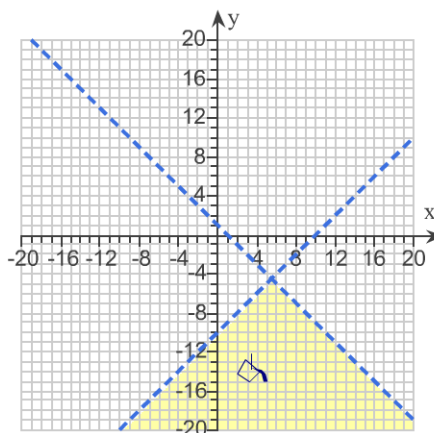
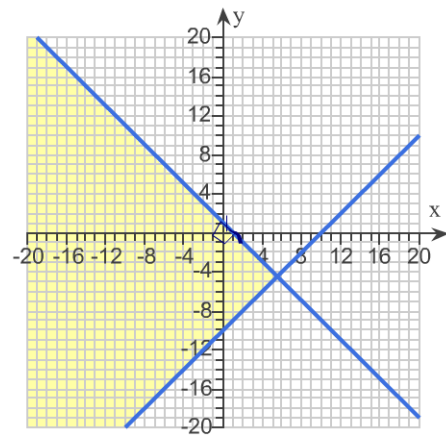
Use the graphing tool to graph the system.



The coordinates of the vertex are

$$\left(\frac{11}{2}, -\frac{9}{2}\right)$$

(Type an ordered pair. Type an integer or a fraction.)



YOU ANSWERED:

$$\left[\frac{11}{2}, -\frac{9}{2}\right]$$

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13. A bank offers two checking-account plans. Their Anywhere plan charges 15¢ per check whereas their Acu-checking plan costs \$1.56 per month plus 3¢ per check. For what number of checks per month will the Acu-checking plan cost less?

Let  $n$  represents the number of checks. Select the correct choice below, and fill in the answer box.

- A.  $\{n | n \geq \square\}$   
 B.  $\{n | n > 13\}$   
 C.  $\{n | n \leq \square\}$   
 D.  $\{n | n < \square\}$

YOU ANSWERED: D

14. Write interval notation for the set  $\{x | -8 < x \leq 8\}$ .

Choose the correct interval.

- A.  $[-8, 8]$   
 B.  $[-8, 8)$   
 C.  $(-8, 8]$   
 D.  $(-8, 8)$

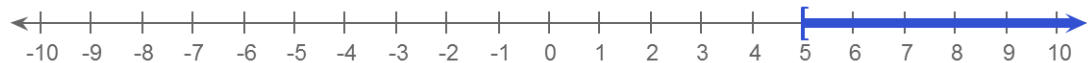
15. Simplify.

$$\left| \frac{-36t^2}{4t} \right|$$

The answer is  $9|t|$ .

YOU ANSWERED:  $9t$

16. Write interval notation for the graph.



Choose the correct interval below.

- A.  $(5, \infty)$   
 B.  $[5, \infty)$   
 C.  $[5, \infty]$   
 D.  $[5, 10)$

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17. Solve.

$$\left| \frac{x-8}{9} \right| < 7$$

The solution set is  $\{x \mid -55 < x < 71\}$ .

18. Find the intersection.

$$\{4, 5, 6, 7\} \cap \{3, 5, 7, 9\}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The intersection is  $\{5, 7\}$ .  
(Use a comma to separate answers as needed.)

B. The intersection is the empty set.

19. Solve.

$$-6 \leq 2x - 5 < 4$$

The solution is  $\left\{x \mid -\frac{1}{2} \leq x < \frac{9}{2}\right\}$ .

(Type an integer or a fraction.)

20. Solve.

$$|x - 2| = 20$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is  $\{-18, 22\}$ .  
(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)

B. The solution set is the empty set.

21. Solve.

$$2y - 2 < 6y - 3$$

Use set-builder notation to describe the complete solution.

$$\left\{y \mid y > \frac{1}{4}\right\}$$

(Type an inequality symbol; then type an integer or a simplified fraction.)

22. Solve.

$$|x| \geq 17$$

Complete the solution set.

$$\{x \mid x \leq -17 \text{ or } x \geq 17\}$$

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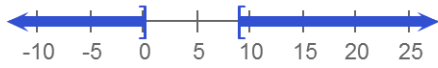
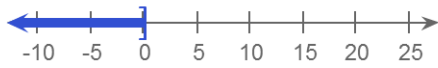
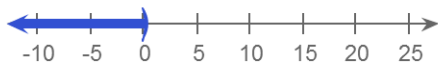
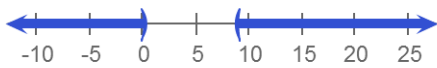
23. Solve.  
 $5x + 8 < 48$

The solution is  $\{x \mid x < 8\}$ .  
(Simplify your answer. Type an inequality symbol; then type an integer or a decimal.)

24. Solve and graph the compound inequality.  
 $4x - 9 \leq -8$  or  $x - 8 \geq 1$

The solution of the compound inequality is  $\left\{x \mid x \leq \frac{1}{4} \text{ or } x \geq 9\right\}$ .  
(Type integers or fractions.)

Which of the following is the graph of the solution of the compound inequality?

- A. 
- B. 
- C. 
- D. 

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25. Graph the system of inequalities. Find the coordinates of any vertices formed.

$$\begin{aligned}x + 2y &\leq 14, \\ 2x + y &\leq 10, \\ x &\geq 0, \\ y &\geq 0\end{aligned}$$

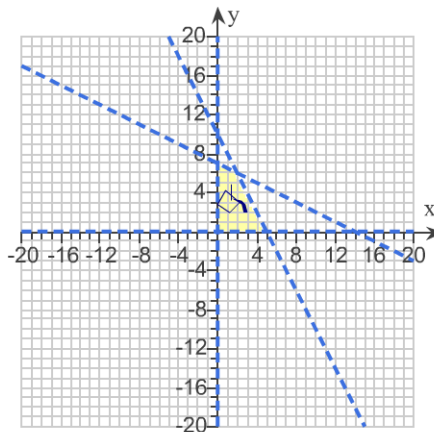
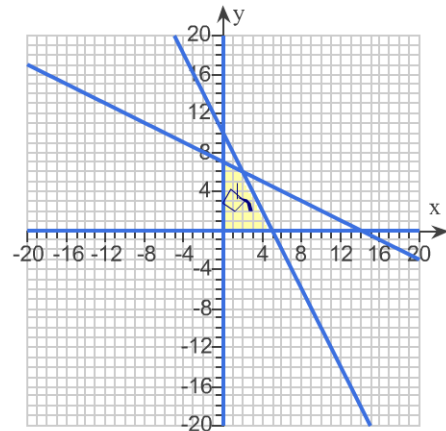
Use the graphing tool to graph the system.



The coordinates of the vertex/vertices are

$(0,0), (0,7), (2,6), (5,0)$ .

(Type an ordered pair. Type an integer or a fraction. Use a comma to separate answers as needed.)



YOU ANSWERED:

26. Graph the compound inequality. Write the solution using interval notation.

$$x < -5 \text{ or } x > 5$$

- A.
- B.
- C.

Write the solution in interval notation.

$(-\infty, -5) \cup (5, \infty)$

(Simplify your answer.)



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27. Find the union.

$$\{3,4,5,6,7\} \cup \{1,3,5,10\}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The union is  $\{1,3,4,5,6,7,10\}$ .  
(Use a comma to separate answers as needed.)
- B. The union is the empty set.

28. Solve.

$$|2x - 5| \leq 14$$

The solution set is

$$\left\{x \mid -\frac{9}{2} \leq x \leq \frac{19}{2}\right\}.$$

(Simplify your answer. Type an integer or a fraction.)

29. Solve.

$$|x| = 19$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is  $\{19, -19\}$ .  
(Type an integer or a simplified fraction. Use a comma to separate answers as needed.)
- B. The solution set is the empty set.

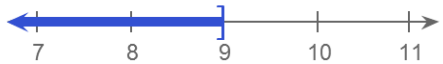

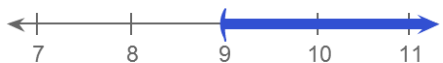
30. Solve. Then graph.

$$5x \geq 45$$

Choose the solution.

- A.  $\{x \mid x \leq 9\}$        B.  $\{x \mid x > 9\}$
- C.  $\{x \mid x \geq 9\}$        D.  $\{x \mid x < 9\}$

Choose the correct graph of the solution.

- A. 
- B. 
- C. 
- D. 