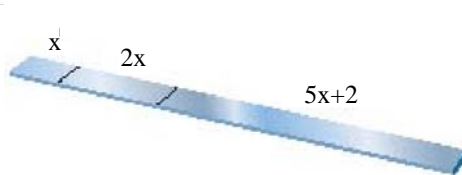


1. A 18-inch piece of steel is cut into three pieces so that the second piece is twice as long as the first piece, and the third piece is two inches more than five times the length of the first piece. Find the lengths of the pieces.

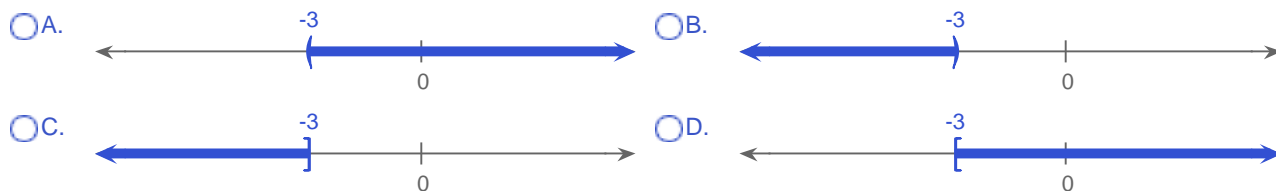


The lengths of the first, the second, and the third pieces are  in,  in, and  in respectively.

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

$$3x - 5 < 7(x + 1)$$

Choose the correct graph below.



Write the answer in interval notation.

3. Solve.

$$|7x| + 2 = 23$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution set is  $\{\text{■}\}$ .  
(Use a comma to separate answers as needed.)
- B. The solution set is all real numbers.
- C. The solution is the empty set.

4. The sum of the speeds of two trains is 724.7 miles per hour. If the speed of the first train is 7.3 mph faster than the second train, find the speeds of each.

The speed of the first train is  mph. The speed of the second train is  mph.  
(Type an integer or a decimal.)

5. Solve the equation for x.

$$-x + 4 = -2$$

x =

6. Solve the absolute value equation.

$$|4n + 5| + 20 = 9$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution set is {  }.  
(Use a comma to separate answers as needed.)
- B. The solution set is all real numbers.
- C. The solution is the empty set.

7. Solve the equation for x.

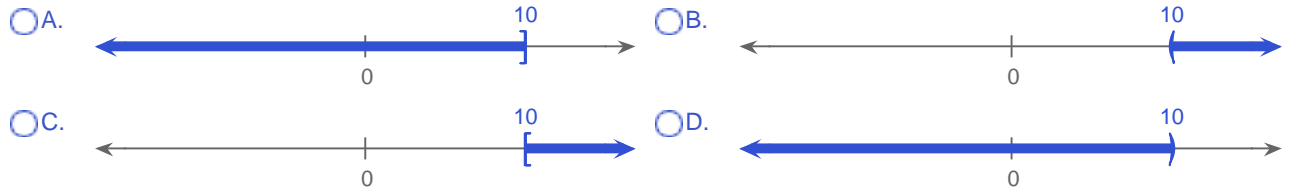
$$x + 1 = 3$$

x =

8. Graph the set of numbers given in interval notation. Then write the inequality statement in x describing the numbers graphed.

$$[10, \infty)$$

Choose the correct graph below.



Write the inequality statement in x describing the numbers graphed.

9. Solve the equation  $P = r + s + t$  for r.

r =

10. The sum of three consecutive integers is 162. What are the integers?

The first integer is .

The second integer is .

The third integer is .

11. Solve the equation for x.

$$7x - 6 = 7(x + 4)$$

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

A.  $x =$   (Type an integer or a simplified fraction.)

B. The solution is all real numbers.

C. There is no solution.

12. A used automobile dealership recently reduced the price of a used compact car by 6%. If the price of the car before discount was \$18,800, find the discount and the new price.

The discount in price is \$ .

Thus, the new price is \$ .

13. Solve the equation for x.

$$\frac{3(x + 4)}{4} = 4x - 2$$

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

14. Solve the equation for x.

$$\frac{2(x - 1)}{4} = \frac{2(x + 6)}{11}$$

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

A.  $x =$   (Type an integer or a fraction. Simplify your answer.)

B. The solution is all real numbers.

C. There is no solution.

15. Solve the given equation for y.

$$5(y + 7) + y = 2(y + 5) + 4$$

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

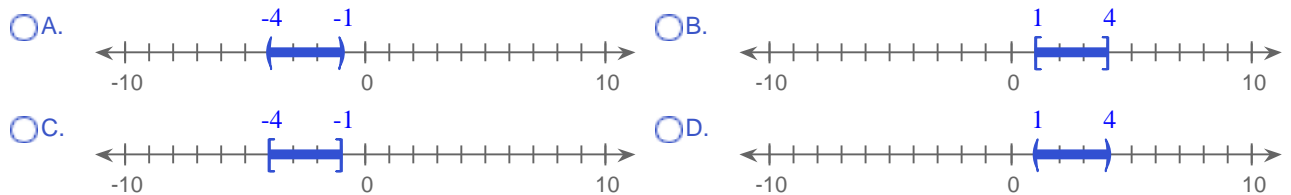
- A.  $y = \square$  (Simplify your answer. Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

16. Solve the inequality. Then graph the solution set, and write it in interval notation.

$$-3 \leq 2x - 5 \leq 3$$

Solve the inequality and write the answer as a compound inequality.

Graph the solution set.



Write the solution in interval notation.

17. For the following proportion, find the unknown number n.

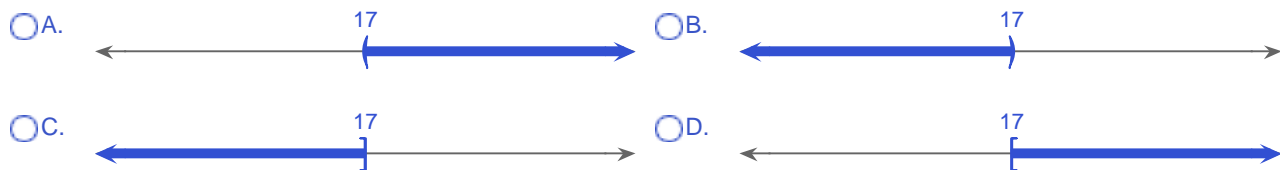
$$\frac{1.6}{0.8} = \frac{8}{n}$$

$n = \square$  (Type an integer or a decimal.)

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

$$-12 + x > 5$$

Choose the correct graph below.



Write the answer in interval notation.

19. When Julie flew to country A in 2007, the exchange rate was 45 monetary units of this country for every 8 U.S. dollars. If Julie brought 240 U.S. dollars for spending money, how many monetary units did she receive?

Julie received  monetary units.

20. Solve the equation for x.

$$9(x - 9) + 6 = -75$$

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

21. Solve the equation for x.

$$6x = 48$$

x =

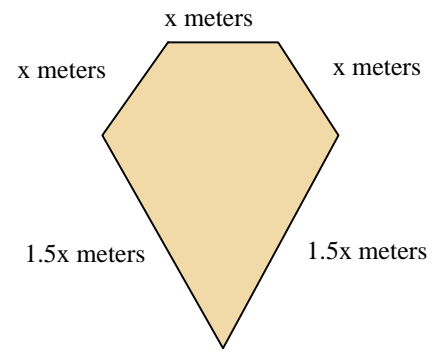
22. Solve.

$$|13x| = 0$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution set is {  }.  
(Use a comma to separate answers as needed.)
- B. The solution set is all real numbers.
- C. The solution is the empty set.

23. The perimeter of a geometric figure is the sum of the lengths of its sides. If the perimeter of the following pentagon (five-sided figure) is 36 meters, find the length of each side.



$$x = \square \text{ m}$$

$$1.5x = \square \text{ m}$$

24. Solve.

$$\left| \frac{4x - 5}{7} \right| = 3$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution set is  $\{\square\}$ .  
(Use a comma to separate answers as needed.)
- B. The solution set is all real numbers.
- C. The solution is the empty set.

25. Solve the formula for the specified variable.

$$w = x + xyz \text{ for } y$$

$$y = \square$$

1. 2  
4  
12

2. A  
 $(-3, \infty)$

3. A, 3, -3

4. 366  
358.7

5. 6

6. C

7. 2

8. C  
 $x \geq 10$

9. P - s - t

10. 53  
54  
55

11. C

12. 1,128  
17,672

13.  $\frac{20}{13}$

14. A, 5

15.  $A, -\frac{21}{4}$

16.  $1 \leq x \leq 4$   
B  
 $[1, 4]$

17. 4

18. A  
 $(17, \infty)$

19. 1350

20. 0

21. 8

22. A, 0

23. 6  
9

24. A,  $\frac{13}{2}, -4$

25.  $\frac{w-x}{xz}$