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QUESTION 1



A company that manufactures cardboard boxes produces 890 to 924 boxes per day. Write an absolute value equation in the form

$$|x - c| = r$$

to represent the maximum and the minimum number of boxes produced in a day.

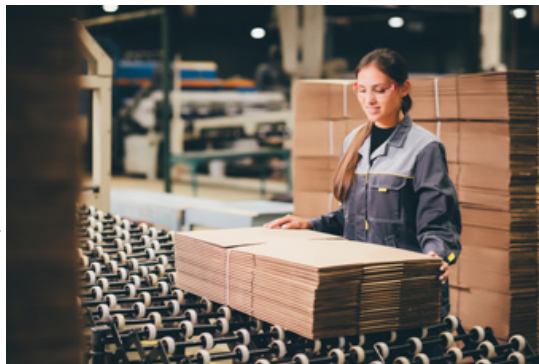
Enter your answer in the space provided.

The absolute value equation is

$$|x - 907| = 17$$



. (Use lower case letters only)



QUESTION 2



Yussuf's team scored between 2 and 8 goals each game last year. Write an absolute value equation in the form

$$|x - c| = r$$

to represent the least and the most number of goals his team scored last year.

Enter your answer in the space provided.

The absolute value equation that represents this

situation is $|x - 5| = 3$



. (Use lower case letters only)



QUESTION 3



What is the extraneous solution for this equation?

$$|16 - 3x| = 5x$$

Select your answer from the drop-down menu.

The extraneous solution is

$x =$

-8 ✓ ▼

QUESTION 4



What is the solution to this absolute value equation?

$$75 - 10x = |5x + 15|$$

Drag and drop the solution into the box.

The solution is $x = 4$ ✓

$x = 4$ and $x = 18$

$x = 18$

∅

QUESTION 5



Solve the given equation, then check the solutions.

$$9x + 108 = |27x - 36|$$

Select the solution from the drop-down menu.

$x = -2$ and $x = 8$ ✓ ▼

QUESTION 6



What is the solution to this equation?

$$|12x + 8| = 4x - 24$$

Drag and drop your answer to correctly complete the sentence.

The solution to this equation is

∅



$x = -4$ and $x = 1$

$x = -4$

$x = 1$

QUESTION 7



Solve the given equation, then check.

$$|63 - 7x| = 14x - 21$$

Select your answer from the drop-down menu.

The solution is

$x =$

 ✓ ▼

QUESTION 8



Solve the given equation, then check.

$$|2a + 5| + 7 = 4a$$

Enter your answer in the space provided.

The solution is

$a =$

 ✓

QUESTION 9



What are the solutions to this equation? Check your answers.

$$|18 - 12b| + 9b = 54$$

Enter your answers from least to greatest in the space provided.

The solutions, from least to greatest are

-12



and

$\frac{24}{7}$



QUESTION 10



Solve the given absolute value equation. Check your answer.

$$|5t - 25| + 10 = 15t$$

Drag and drop the answer to correctly complete the sentence.

The solution is

$t =$

1.75



1.5

-1.5

-1.75

QUESTION 11



Solve and check the given absolute value equation.

$$|3y - 12| - 6y = 30$$

Select your answer from the drop-down menu.

The solution is

$y =$

- 2

✓ ▼

QUESTION 12



What is the solution for this equation?

$$|6 - 2p| - 8 = 7p$$

☐

$$p = -\frac{14}{5}$$

☐

$$p = \frac{14}{5}$$

☐

$$p = \frac{2}{9}$$

☒

$$p = -\frac{2}{9}$$



QUESTION 13



Solve.

$$8x + 20 = |2x - 4|$$

Which statement is true?



$x = -4$ and $x = -1.6$
are the solutions



$x = -4$
is the only solution



There is no solution.

☒ $x = -1.6$

is the only solution



QUESTION 14



Solving the equation

$$|60 + 5x| = 15x$$

results in two solutions:

$$x = -3$$

and

$$x = 6$$

. Which solution is extraneous?

Enter your answer in the space provided.

The extraneous solution to this equation is

$$x =$$

-3



QUESTION 15



Solving the absolute value equation

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

for

$$x$$

yields two solutions:

$$x = -2$$

and

$$x = 6$$

.

Which solution is the extraneous solution for this equation?

Enter your answer in the space provided.

The extraneous solution is

$$x =$$

-2



QUESTION 16



The solutions to

$$|6x - 40| = 14x$$

are

$$x = -5$$

and

$$x = 2$$

. Determine whether each solution is extraneous or a real solution.

Drag and drop your answers into the boxes to correctly complete the sentences.

The solution

$$x =$$

$$-5$$

is



an extraneous solution.

The solution

$$x = 2$$

is not



an extraneous solution.

The only solution to the equation is

$$x = 2$$



$$\leftrightarrow x = -5$$

QUESTION 17



What is the solution set for this equation?

$$|2x - 7| - 3 = -2$$

Drag and drop the answer into the box.

The solution set is $x = 3$ and $x = 4$ ✓.

$$x = -1 \text{ and } x = -6$$

$$x = 1 \text{ and } x = 6$$

$$\emptyset$$

QUESTION 18



Solve the given absolute value equation.

$$|3x - 5| + 8 = 5$$

Which statement is true?

☐

The solution for this equation is

$$x = -3$$

.

☐

The solutions for this equation are

$$x = \frac{2}{3}$$

and

$$x = 0$$

.

The solution set for this equation is

$\emptyset$

because it has no solution.



The solution for this equation is

☐ $x = -\frac{2}{3}$

.

QUESTION 19



An adult sand cat weighs 2.25 kg plus or minus 1.25 kg. What is the absolute value equation that represents the minimum and maximum weights of an adult sand cat?



☐ $|2.25 - 1.25| = x$

☒ $|x - 2.25| = 1.25$



☐ $|x + 2.25| = 1.25$



$$|x - 1.25| = 2.25$$

QUESTION 20



Which statements are true for this equation?

$$|7x - 9| + 14 = 2$$

There are no solutions.



$x = -1$
is a solution.

The solution set is

$\emptyset$

.



$x = \frac{21}{7}$
is a solution.



$x = 3$
is a solution.

☐

$$x = -\frac{3}{7}$$

is a solution.

QUESTION 21



Solve.

$$5|x - 3| = 20$$

What are the solutions to this equation?

☐

-1

☐

7

☐

-3.4

☐

1

☐

4.6

☐

-7

QUESTION 22



An automaker needs a new bolt for its car design. The desired length of the bolt is 1.9 centimeters, and it will reject bolts that are 0.05 centimeters more or less than this length. What is the absolute value equation to determine the maximum and minimum sizes of the bolts?



Select your answer from the drop-down menu.

The equation is

$$|x - 1.9| = 0.05 \quad \checkmark \quad \vee$$

QUESTION 23



A blanket manufacturer produces blankets that are 240 cm long. The company rejects blankets that are 0.125 cm more or less than this length. Choose the absolute value equation that represents the least and greatest possible lengths of these blankets on the market.

Select your answer from the drop-down menu.



The equation that represents this situation is

$$|x - 240| = 0.125$$

QUESTION 24



Solve.

$$|8 - 4x| + 3 = 27$$

Select your answer from the drop-down menu.

The solution set for this equation is

$$x = -4 \text{ and } x = 8$$

QUESTION 25



What are the solutions to this equation?

$$|2 - x| - 9 = -2$$

Enter your answers from **least to greatest** in the spaces provided.

$x =$

-5



and

$x =$

9



QUESTION 26



Complete the solution.

$$3|10 - x| = 48$$

$$|10 - x| = 16$$

Drag and drop the values into the boxes to correctly complete the solution.

$$10 - x = 16$$

$$10 - x =$$



$$- x =$$



$$- x =$$



$$x =$$



$$x =$$



QUESTION 27



Solve.

$$9|x - 4| = 63$$

Enter the solutions from **least to greatest** in the spaces provided.

$x =$

-3



and

$x =$

11



QUESTION 28



Solve.

$$2|6 - x| = 4$$

Drag and drop the values into the boxes to correctly complete the solution.

$$2|6 - x| = 4$$

$$\frac{2|6 - x|}{2} = \frac{4}{2}$$

$$|6 - x| = 2$$

$$6 - x =$$

2

$$6 - x =$$

 ✓

$$-x =$$

 ✓

$$-x =$$

 ✓

$$x =$$

 ✓

$$x =$$

 ✓

QUESTION 29



What are the solutions to this equation?

$$11|x - 3| = 132$$

☒ $x = -9$ and $x = 15$ 

☐ $x = -9$ and $x = -15$

☐ $x = 9$ and $x = 15$

☐ $x = 9$ and $x = -15$

QUESTION 30



What is the extraneous solution to this equation?

$$|72 + 3x| = 9x$$

☐ 6

☐ -12

☐ 12

☒ -6 

