



To the video!

Write your questions and thoughts here!

1.3 – Solving Absolute Value Equations

1

Recall:

$|-3| =$ The absolute value of a number is the _____ the number is from _____ on a _____.

Solve $|x| = 3$

Solve $|x| = -3$

Absolute Value can never = _____

Solving an Absolute Value Equation

Let a , b , and c be constants and $c > 0$.

If $|ax + b| = c$
then

Algebra I
Section 7.4



Sully's Super Steps for Solving Abs Vals

1) _____
(Solve for the Abs Value)

2) _____
(Write two equations)

3) _____

Solve. Write non-integer answers in fractional form.

1. $|\frac{11}{4}r| = \frac{77}{12}$

2. $\frac{1}{3}|x + 2| = 6$

3. $|2x| - 9 = -13$

4. $|5 - 2x| = 15$

5. $|3b + 5| - 3 = 4$

1.3 – Solving Absolute Value Equations

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You Try!

6. $6|5 + 5r| = 30$

7. $|-8 + 2a| + 1 = -21$

8. $|k + 4| = 2$

9. $5 + 3|-5v - 1| = 2$

10. $-5|3x - 1| - 4 = -44$

11. $\left| \frac{x+2\frac{1}{12}}{\frac{4}{24}} - 20 \right| = \frac{73}{-19}$

12. Michael Jordan averaged 37 points per game in 1987. Suppose in one game MJ was 12 points from this average. What possible point totals could Jordan have scored? Write and solve an absolute value equation to answer the question.

You summarize what you have learned!

ALGEBRA SKILLZ!

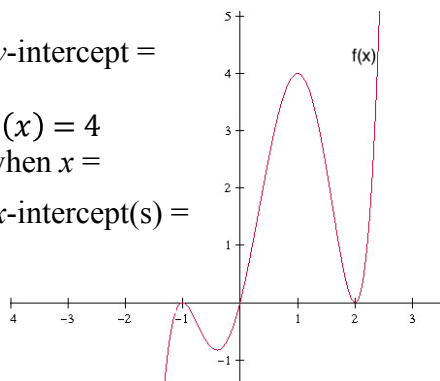
GRAPH

a. $f(2) =$

b. y -intercept =

c. $f(x) = 4$
when $x =$

d. x -intercept(s) =



SIMPLIFY

Simplify the radical

a. $\sqrt{80}$

b. $3\sqrt{64}$

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SOLVE

Solve for x .

Hint: Use the LCM!!

a. $\frac{x}{3} + \frac{2x}{5} = \frac{11}{15}$

FACTOR

b. $x^2 + 20x + 19$

Three of these equations have no solution!

1.3 Practice - Absolute Value Equations

Solve each equation. Write non-integer answers in fractional form.

1) $|-5n| = -5$

2) $|-10m| = 100$

3) $\left|\frac{3}{4}p\right| = \frac{9}{16}$

4) $\left|\frac{3}{11}x\right| = \frac{9}{44}$

5) $\left|r + \frac{11}{4}\right| = \frac{7}{4}$

6) $\left|-\frac{5}{2}x\right| = 5$

7) $|6 + r| + 10 = 14$

8) $2 + |-1 - x| = -8$

9) $5|6n - 2| + 4 = -36$

10) $|2a - 1| - 4 = 5$

11) $3|-1 - 7x| + 9 = 96$

12) $9|-2v + 1| + 1 = 46$

13) $|-6 + 2b| - 1 = -1$

14) $-8|10n - 5| = -120$

1.3 Application and Extension

1. Find the value of m : $|\frac{1}{2}m| = \frac{5}{8}$

2. Solve. $4 - |1 + 3v| = 12$

SAT PREP!!

MULTIPLE CHOICE

If $x^2 = k$, where x and k are integers, which of the following could be the value of k ?

- (A) 3
- (B) 6
- (C) 9
- (D) 12
- (E) 15

GRID IN

For what integer value is $3x + 5 > 11$ and $x - 3 < 1$?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

3. The average temperature in Baumholder is usually within 5 degrees of Kaiserslautern. Suppose the average temperature in March was 38° F in Kaiserslautern. **Write** and **solve** an **absolute value equation** to find the possible average temperatures in Baumholder for March. Yes- you must write the equation!

4. Before going to bed, Sully usually spends 15 minutes listening to Mariah Carey. This time varied by 20 minutes last night.

a. Write and solve an **absolute value equation** to find the possible amount of time Sully spent listening to Mariah last night.

b. Usually, absolute value equations have two answers. In this problem, can we tell which one is correct?

Match each absolute value function to its graph:

a. $y = |x|$

a. _____

c. _____

b. $y = |x - 5|$

b. _____

d. _____

c. $y = |x - 5| + 2$

d. $y = |x| + 2$

Explain how you found your answer:

