



GRADE 6 · EXPRESSIONS & EQUATIONS · PRACTICE

CHECKING SOLUTIONS BY SUBSTITUTION

Today's goal: I can use substitution to determine whether a number or a set of numbers makes an equation true, use substitution to determine whether a number or a set of numbers makes a one-variable, one-step equation true, use substitution to determine whether a number or a set of numbers makes a one-variable, one-step inequality true, use substitution to determine whether a number or a set of numbers makes an inequality true and demonstrate that the solution of an equation or inequality is the value of the variable that will make the equation or inequality true.



Pick your peppers!

Everyone does Mild & Medium. Then climb as high as you can.



Mild

Tan the Turtle



Medium

Digit the Fox



Spicy

Blaze the Dragon



Extra Spicy

Pi the Owl

WATCH MR DJ SOLVE

Is $m = 14$ a solution of $m - 5 = 9$?

1 $14 - 5 = 9 \rightarrow \text{true.}$

Answer: **Yes**



REMEMBER

To check a value, put it **back into the original statement** and see whether the result is true. Is $k = 12$ a solution of $k - 4 = 8$? $12 - 4 = 8 \rightarrow 8 = 8 \checkmark$ Yes. Inequalities work the same way, but many values will pass.



MILD

Tan the Turtle: Slow and steady. Warm up!

1 Is $n = 7$ a solution of $n + 8 = 15$?

Answer

2 Is $y = 7$ a solution of $4y = 28$?

Answer



OOPS ALERT

Careful on #1! The slip Mr DJ sees most: Re-solved instead of substituting.

**MEDIUM****Digit the Fox:** Stretch your brain.

- 3 Is $x = 18$ a solution of $x \div 3 = 6$?

Answer

- 4 Is $x = 5$ a solution of $2x + 1 = 11$? Show every step.

Answer

- 5 For $x < 10$, is 9 a solution? Is 10 a solution? Explain the difference.

Answer

**SPICY****Blaze the Dragon:** Bring the heat!

- 6 For $x \geq 6$, is 6 a solution? Is 5? Explain how $\geq$ differs from $>$.

Answer

- 7 From the set $\{2, 4, 5, 9\}$, list every value that is a solution of $x > 4$. Show each test.

Answer



EXTRA SPICY

Pi the Owl: Big-brain challenge.

- 8 Tomas checks whether $x = 7$ solves $5x = 35$ by re-solving the equation and getting $x = 7$. Explain why substituting is a better check.

Answer



How did this sheet feel?



Easy for me



Just right



Made me think

Stuck? Watch Mr DJ explain it

"Variables, Expressions, and Equations Explained | Algebra for Beginners" on YouTube: youtube.com/@MathWithMrDJ

Brain break: daily puzzles

Three new math puzzles every day, free:
puzzles.mathwithmrdj.com