Algebra 1

Unit 7: Exponential Functions

Notes

Day 1 NOTES- Solving Exponential Equations

An exponential equation is an equation containing one or more expressions that have a variable as an exponent. When solving exponential equations, you want to rewrite the equations so they have the same bases. If they have the same bases, you set the exponents equal to each other.

If $b^x = b^y$, then x = y

EXAMPLE 1 Solving Exponential Equations with the Same Base



b.
$$6 = 6^{2x-3}$$

 $1 = 2x - 3$
 $+ 3$ $+ 3$
 $4 = 2x$
 $\frac{4}{2} = \frac{2x}{2}$

Divide each side by 2.

Simplify.

$$3x = 2x + 3$$

$$-2x - 2x$$

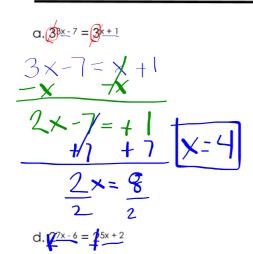
$$x = 3$$

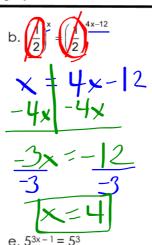
 $\mathbf{c.} \quad 10^{3x} = \quad 10^{2x+3}$

Solving Equations with SAME Bases

BASE = BOTTOM

c. $7^{3x+8} = 7^{2x-5}$





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$$\begin{array}{r}
f. & 5 - 2x = 6 & 3x - 10 \\
-2 \times & = 3 \times - 10 \\
-3 \times & -3 \times \\
-4 \times & = -10 \\
-5 \times & = 2
\end{array}$$

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