**4.3 Solving Inequalities using**

**MULTIPLICATION & DIVISION**

***EQ:*** ***How do we use what we know about solving equations to solve inequalities?***

Solving inequalities is similar to solving equations: **ISOLATE the** **VARIABLE ALL by itself** on the **LEFT SIDE** of the inequality sign by using **INVERSE OPERATIONS.**

Ex: These are all SOLVED inequalities:

Y > -1 B < -5.5 R < 8.75 D > 19

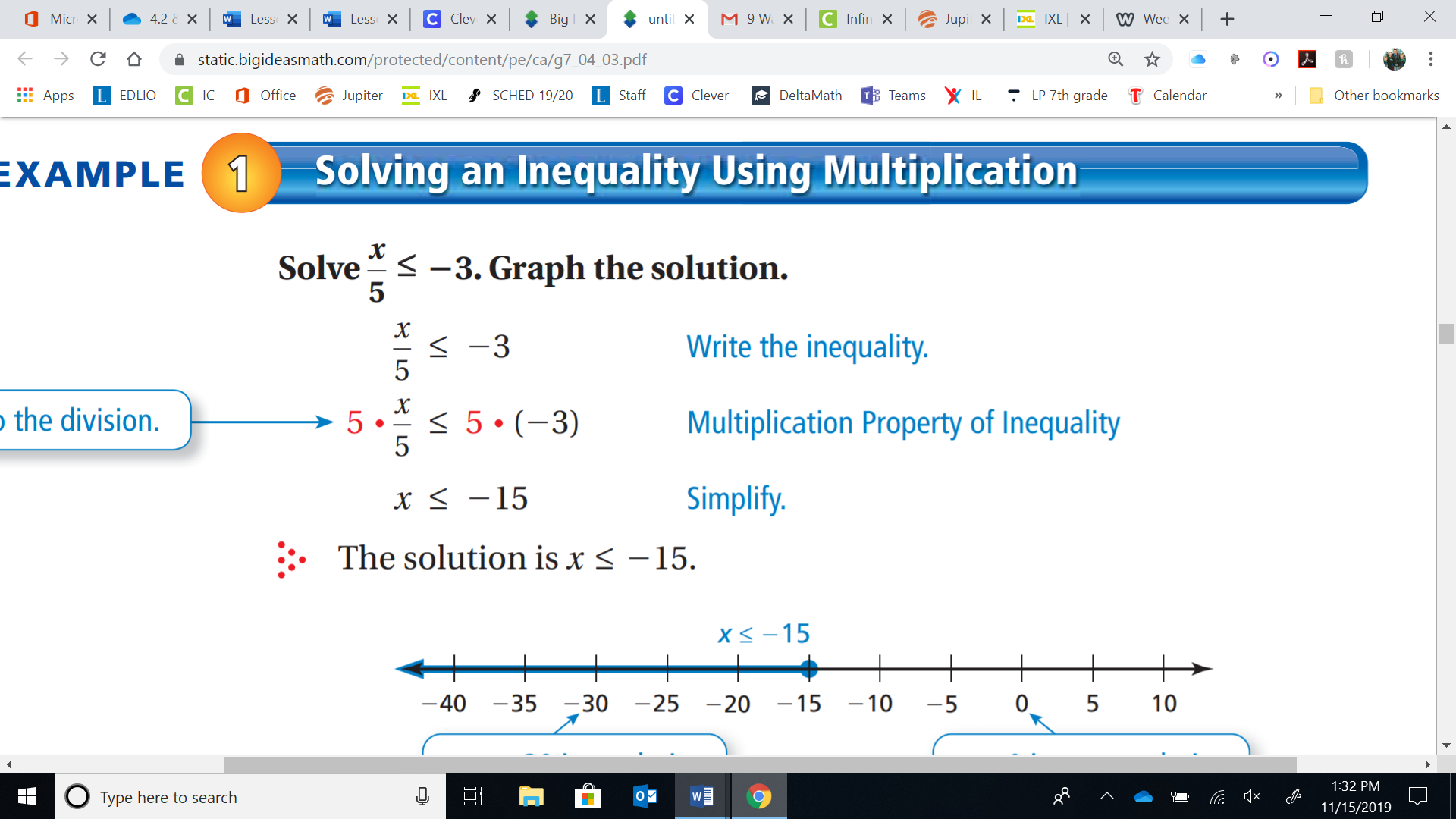
**\*\*\*** The VARIABLE **SHOULD** be on the **LEFT SIDE** of the INEQUALITY so that it can be easily graphed! \*\*\*

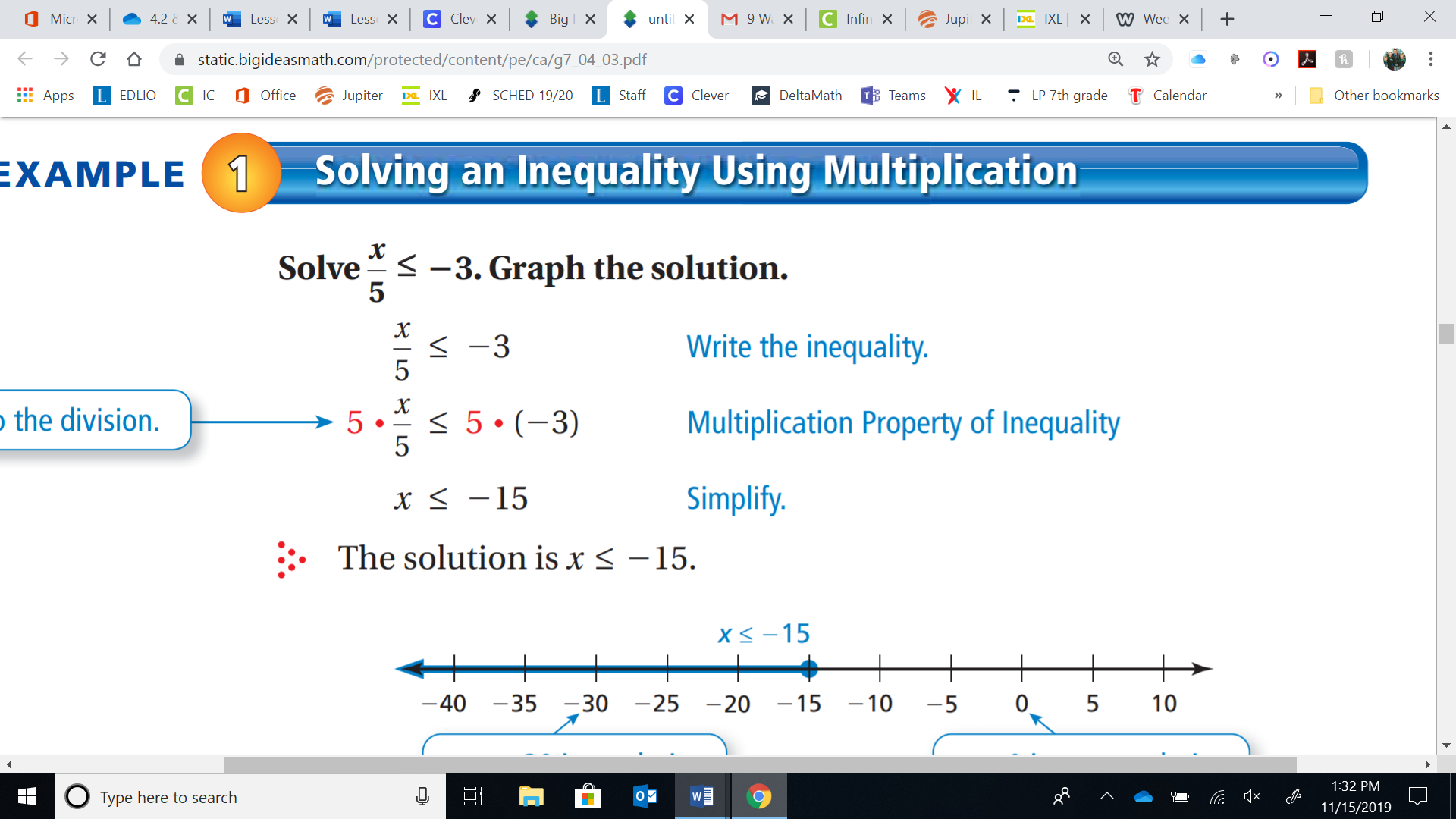
**\***IF the variable is on the RIGHT when solved:

**SWITCH the VARIABLE with the NUMBER** &

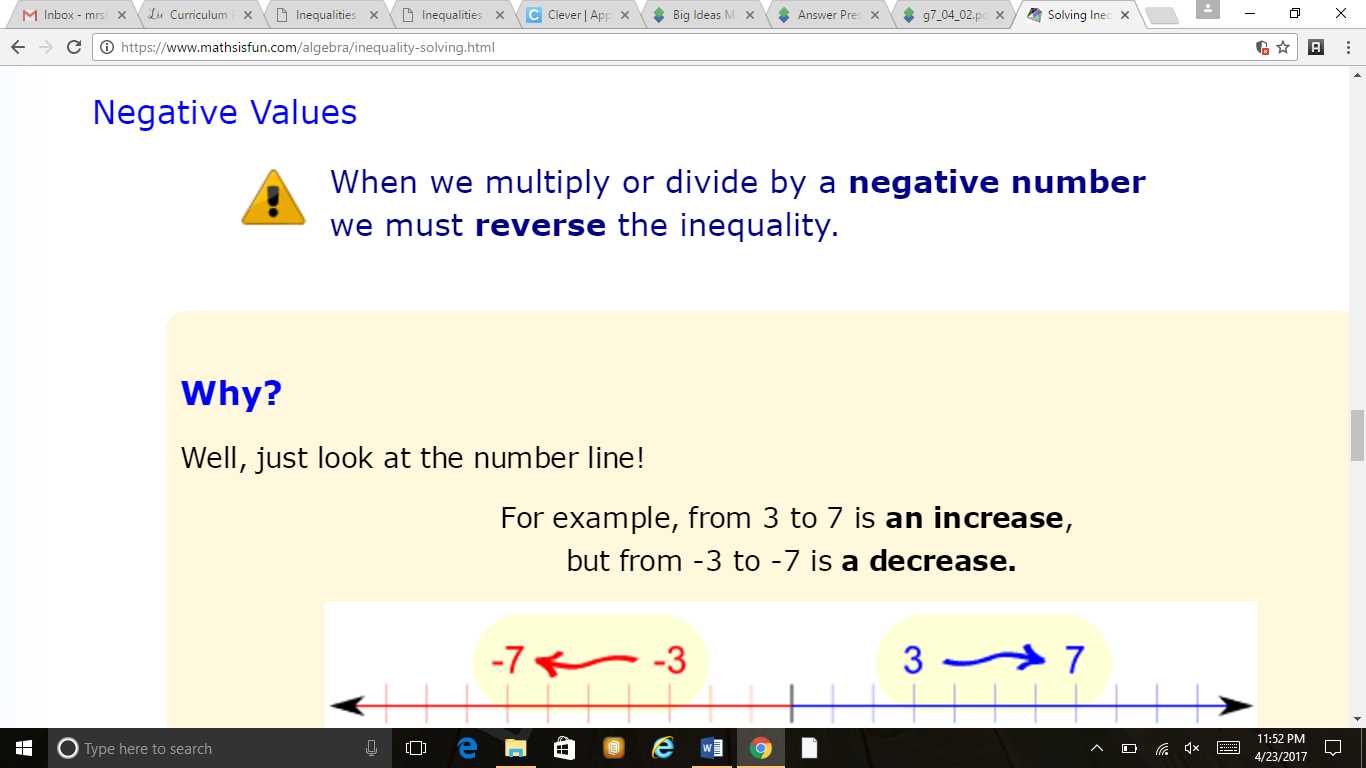
**FLIP the INEQUALITY SIGN!**

**EX:** 4 **>** D becomes D **<** 4





\*\*\*\*THERE IS ONE DIFFERENCE FROM EQUATIONS!



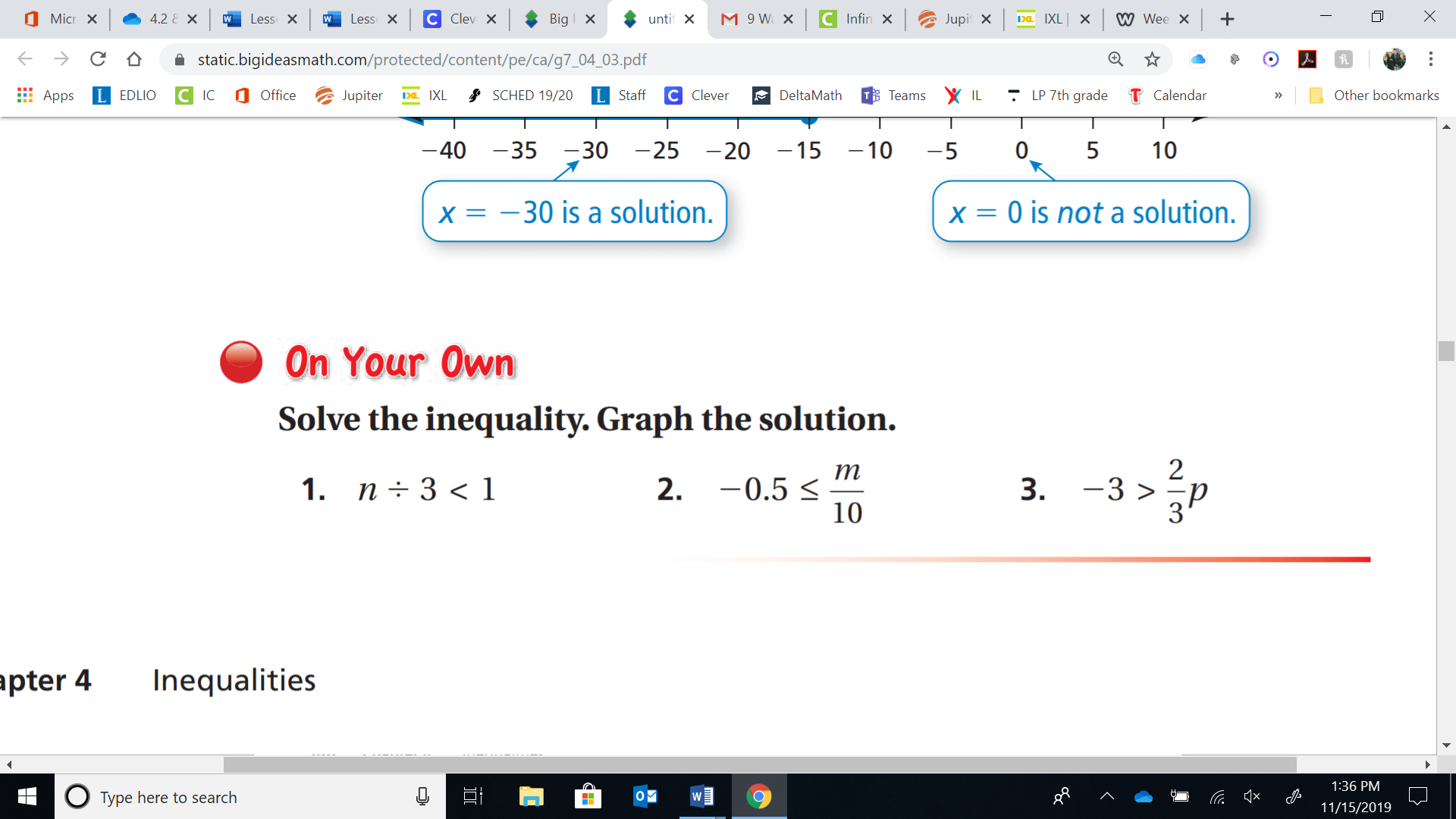
***EXAMPLE 2:*** Solve **-4X > 20**

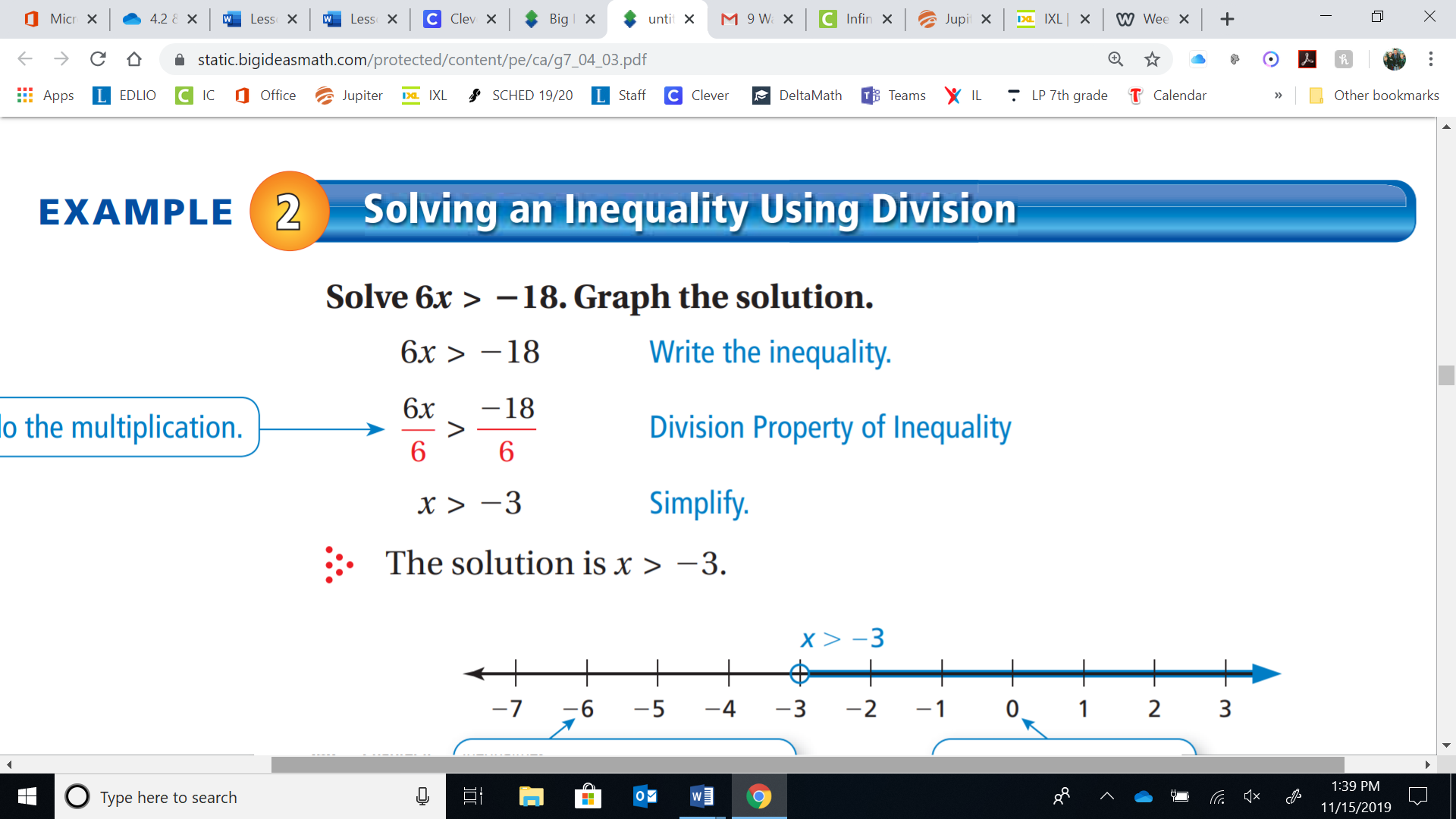
-4X > 20 DIVIDE BOTH SIDES by **-4**

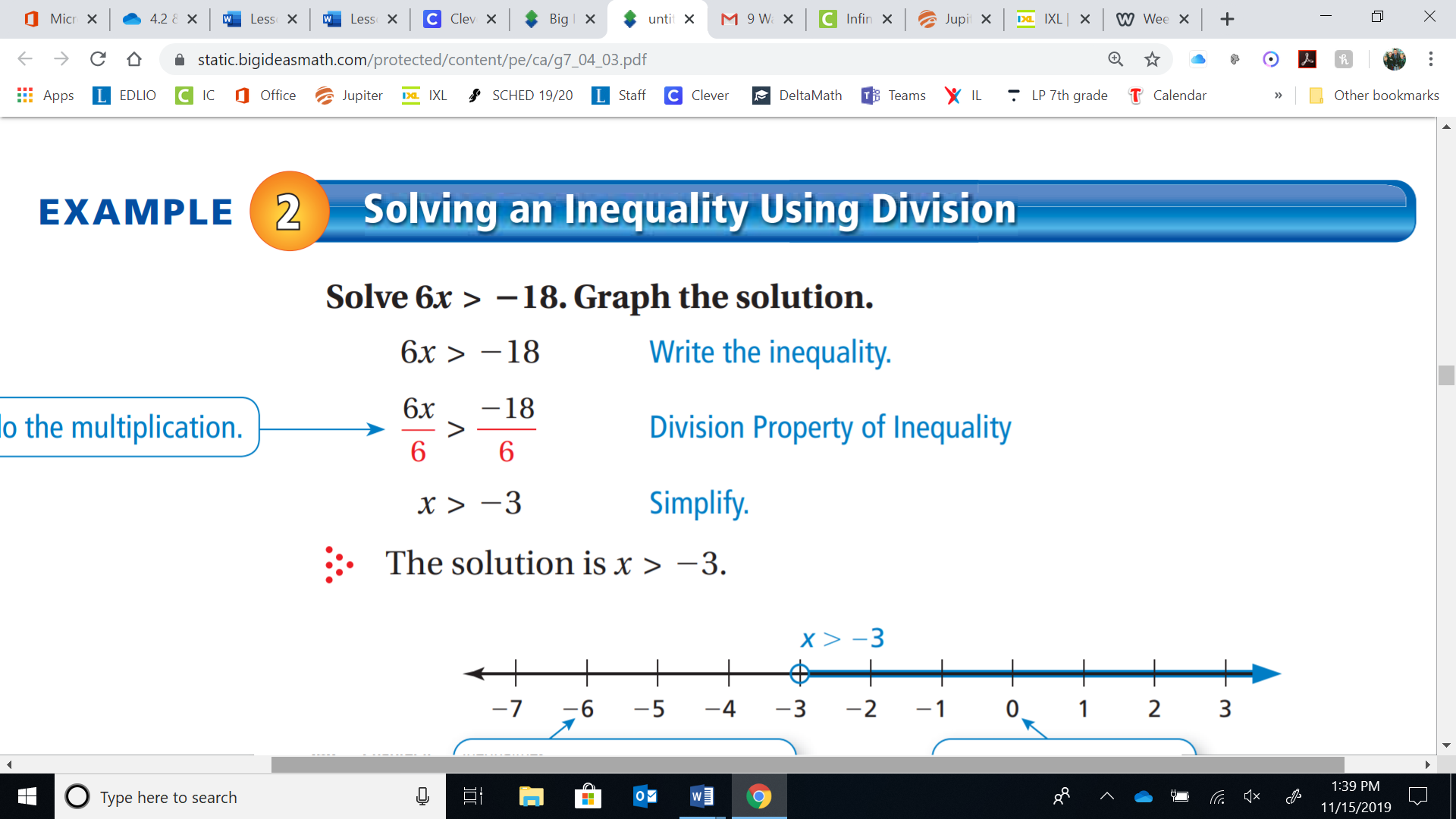
-4 -4

**X < -5** Since we DIVIDED by a NEGATIVE number,

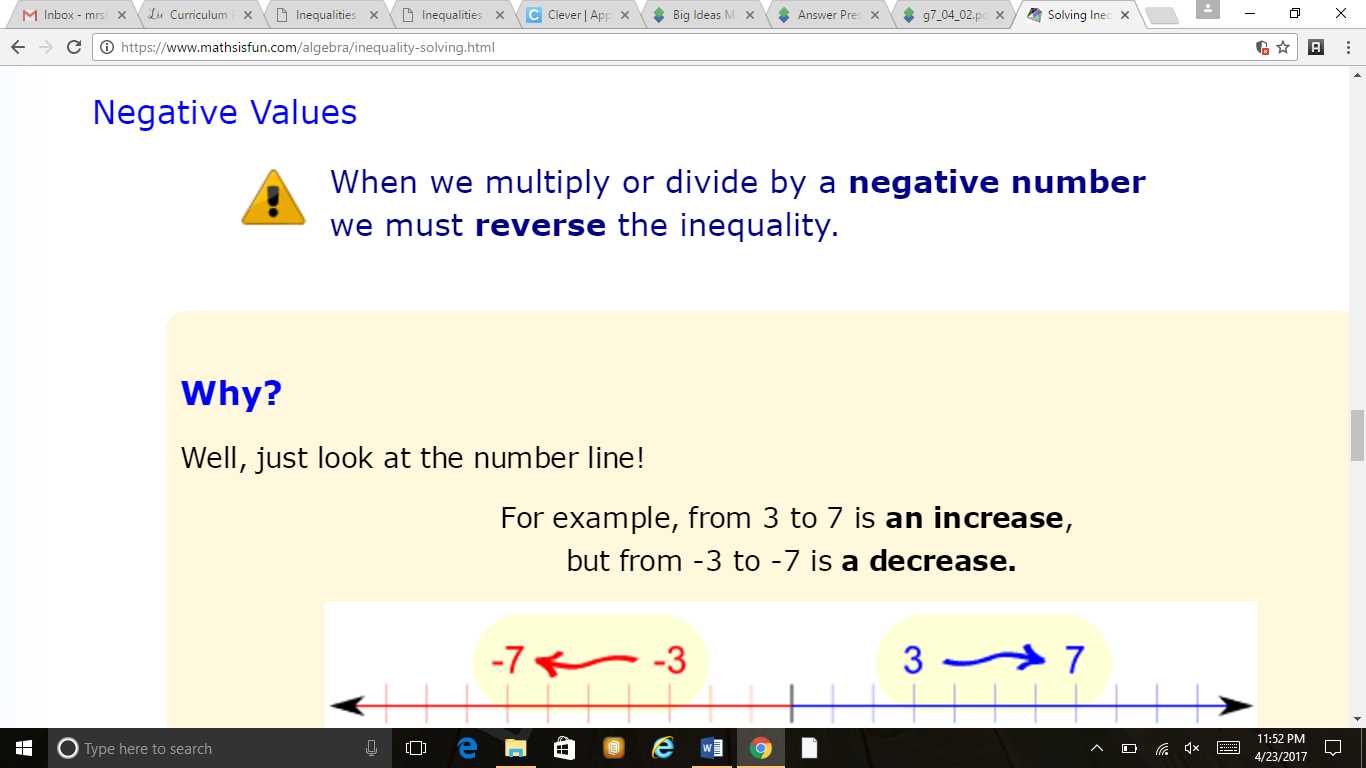
we MUST **REVERSE/FLIP** the inequality sign!







\*\*\*\*THERE IS ONE DIFFERENCE FROM EQUATIONS!

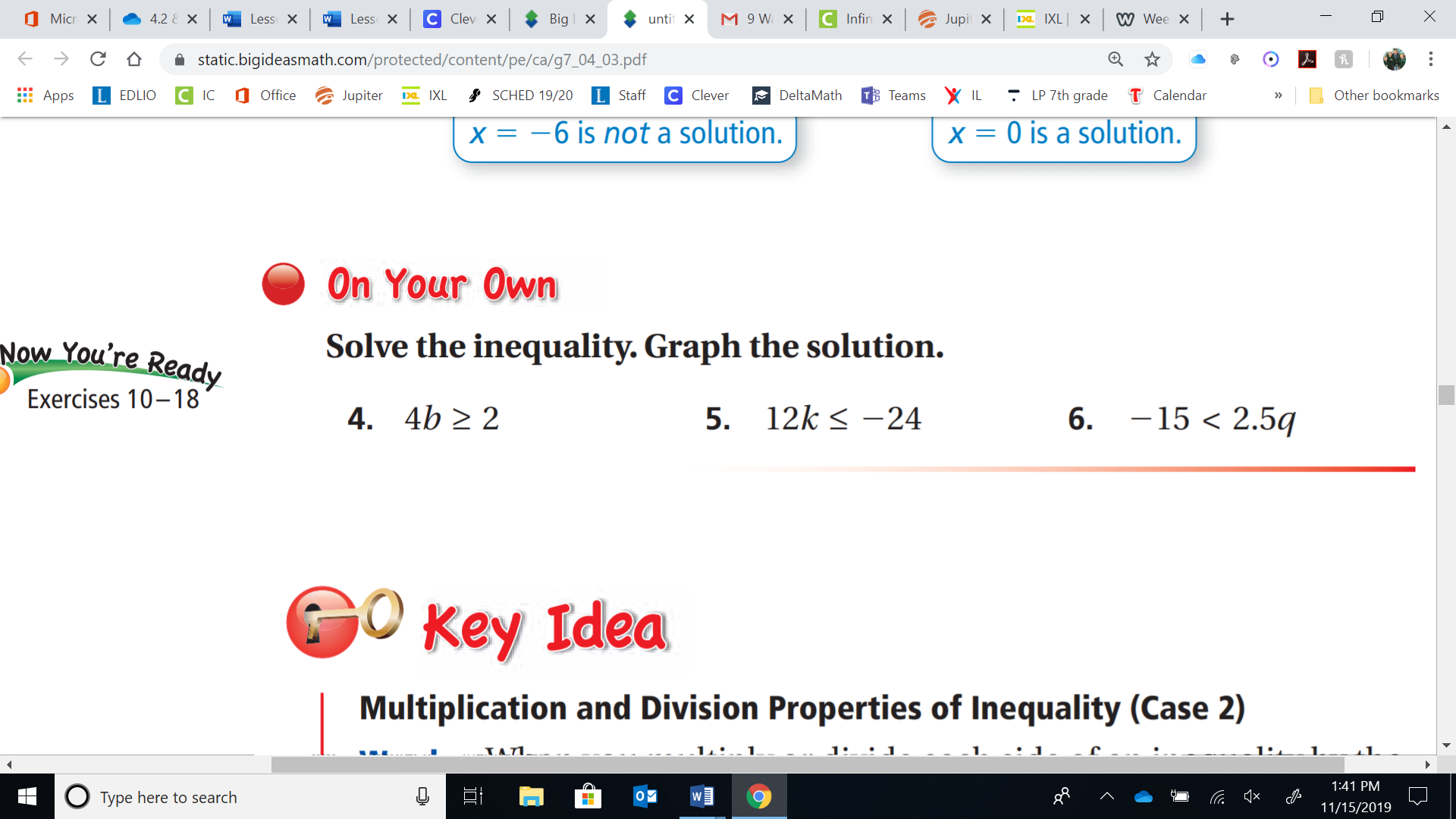


***EXAMPLE 2:***  **> 5**

-2 > 5 \*-2 MULTIPLY BOTH SIDES by **-2**

**X <**  **-10** Since we MULTIPLIED by a NEGATIVE number,

we MUST **REVERSE/FLIP** the inequality sign!



**4.3 Solving Inequalities using**

**MULTIPLICATION & DIVISION**

***EQ:*** ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

Solving inequalities is similar to solving equations:

You have to **ISOLATE the** **VARIABLE ALL by itself** on the

**LEFT SIDE** of the inequality sign by using **INVERSE OPERATIONS.**

Ex: These are all SOLVED inequalities:

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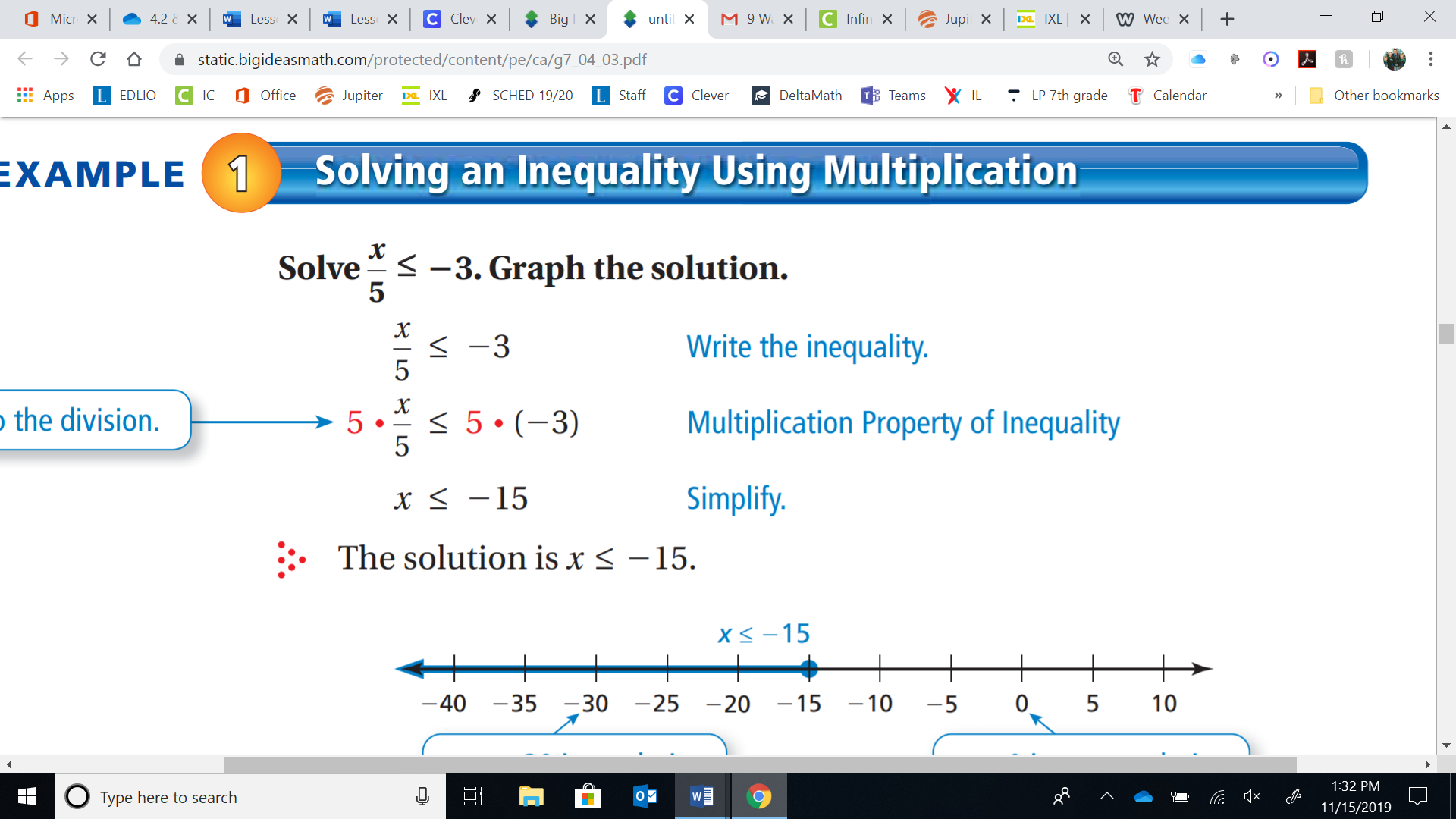
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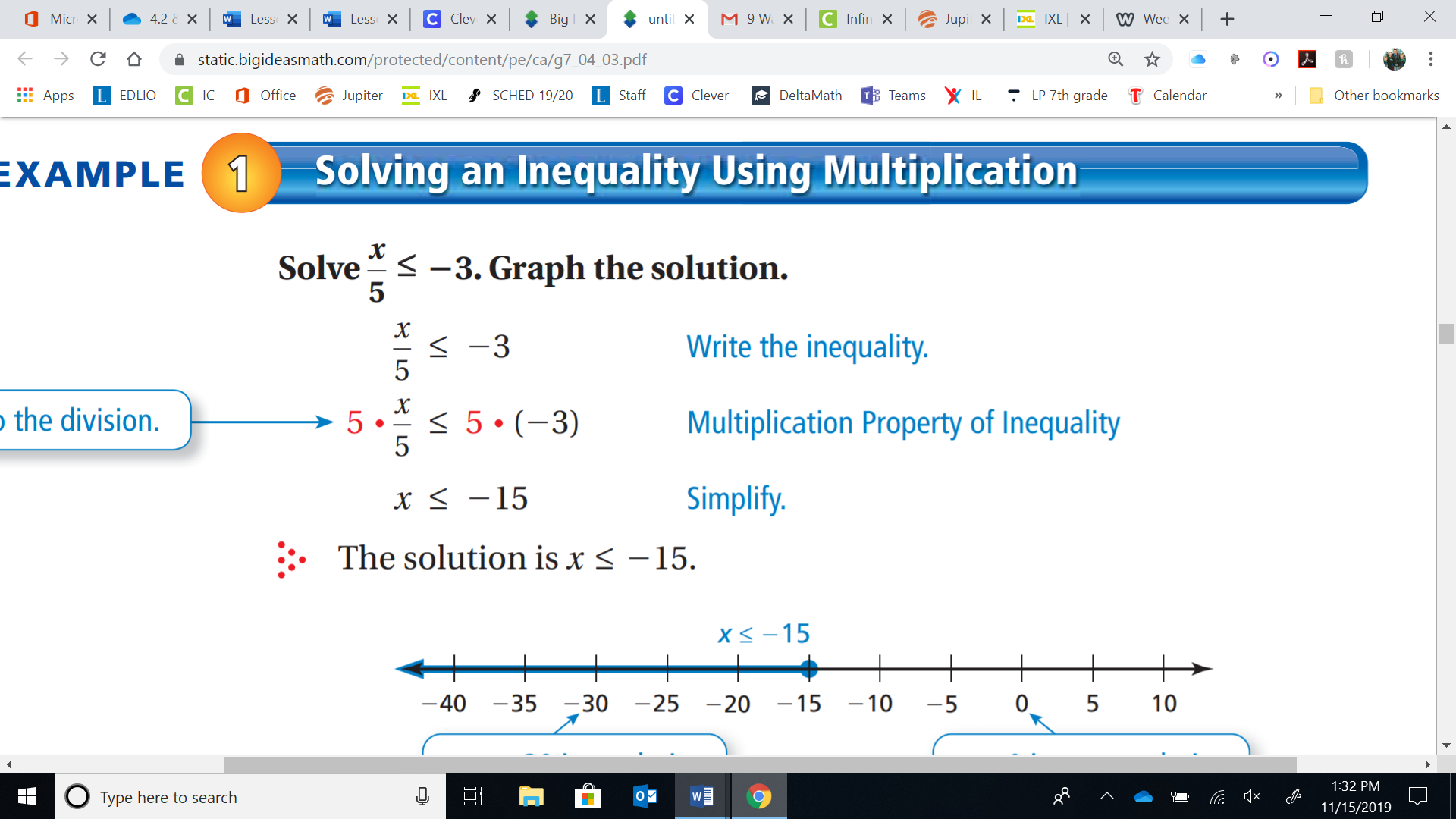
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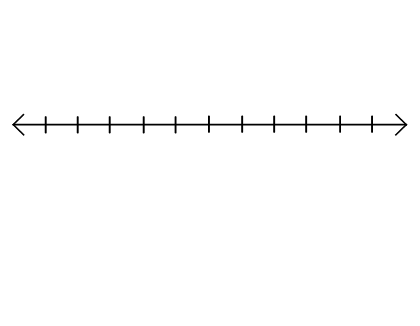
**SWITCH the VARIABLE with the NUMBER** &

**FLIP the INEQUALITY SIGN!**

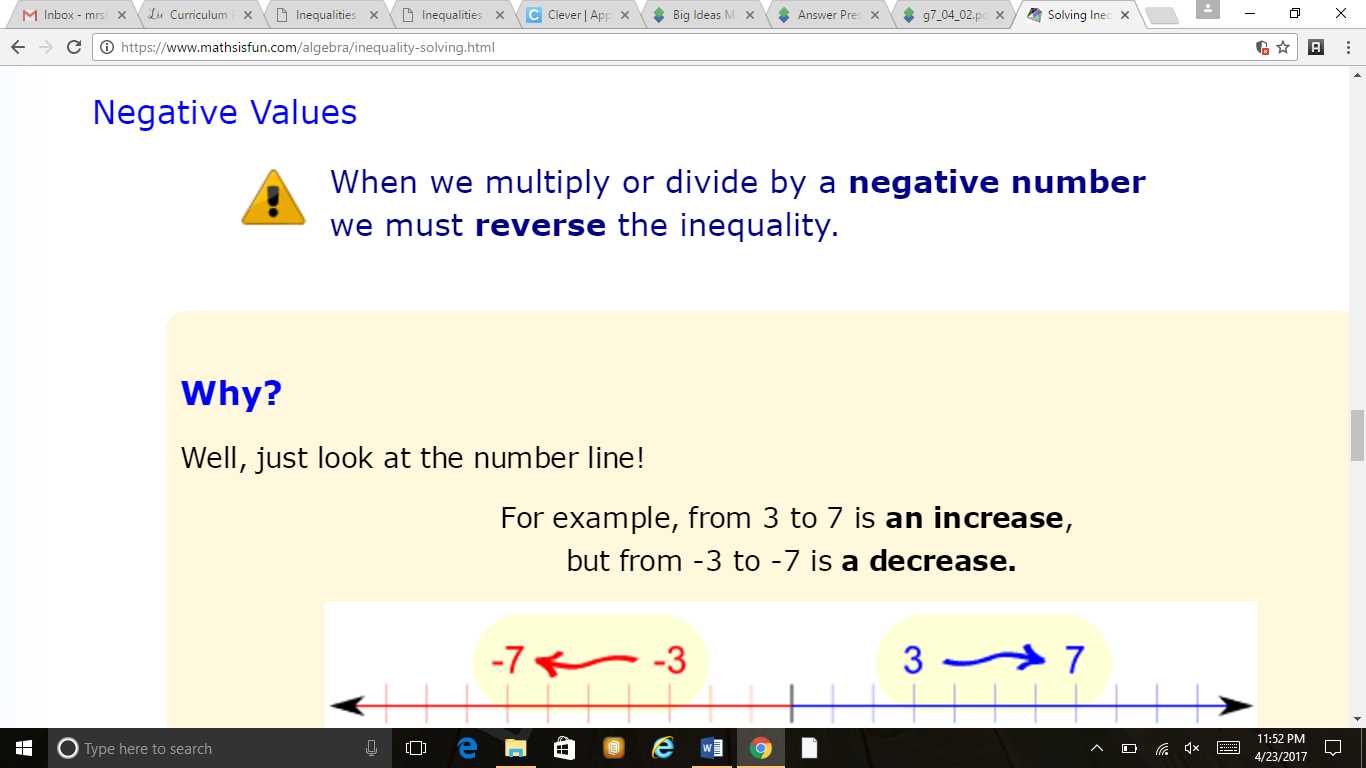
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\*\*\*THERE IS ONE DIFFERENCE FROM EQUATIONS!\*\*\*

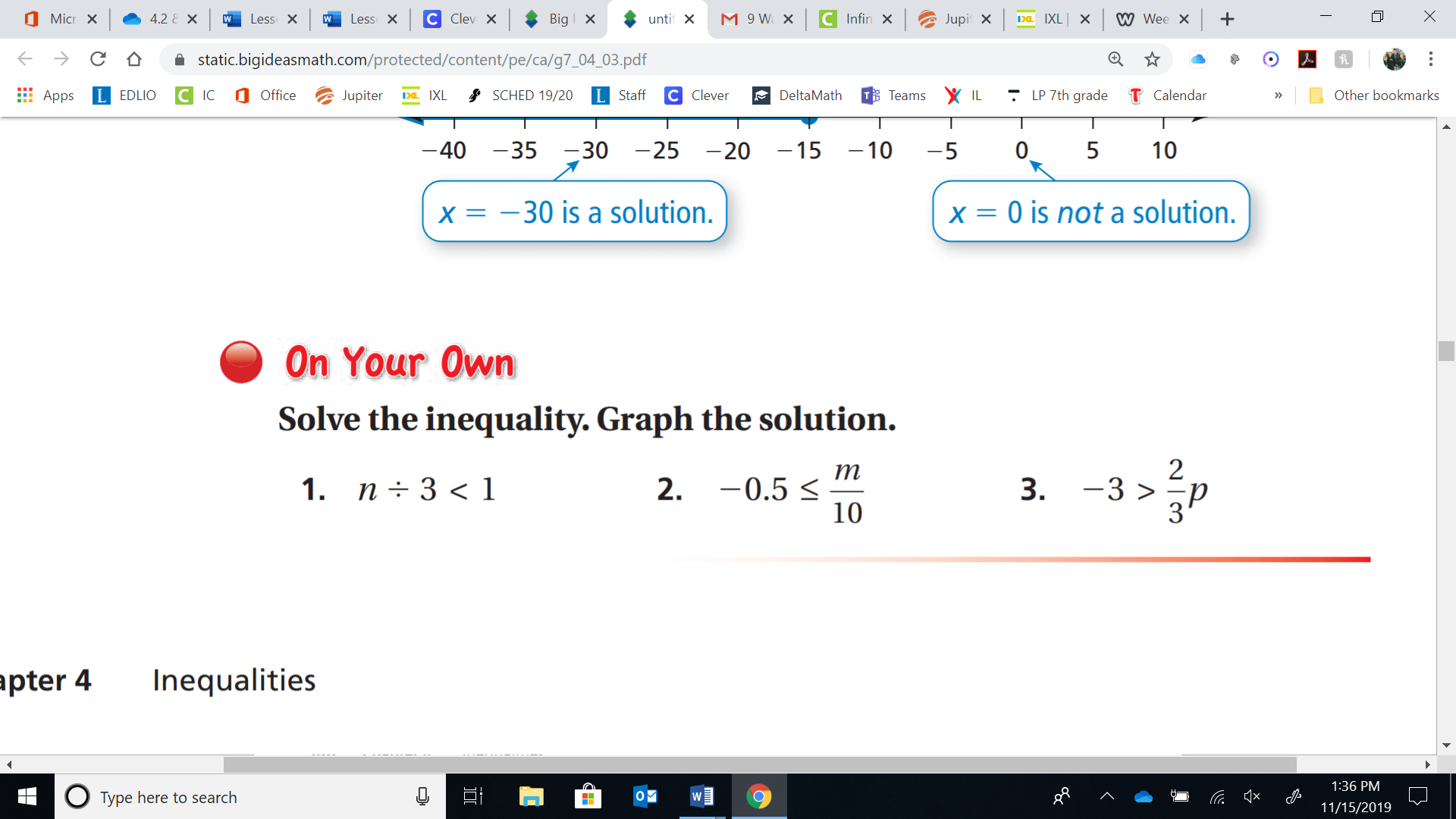


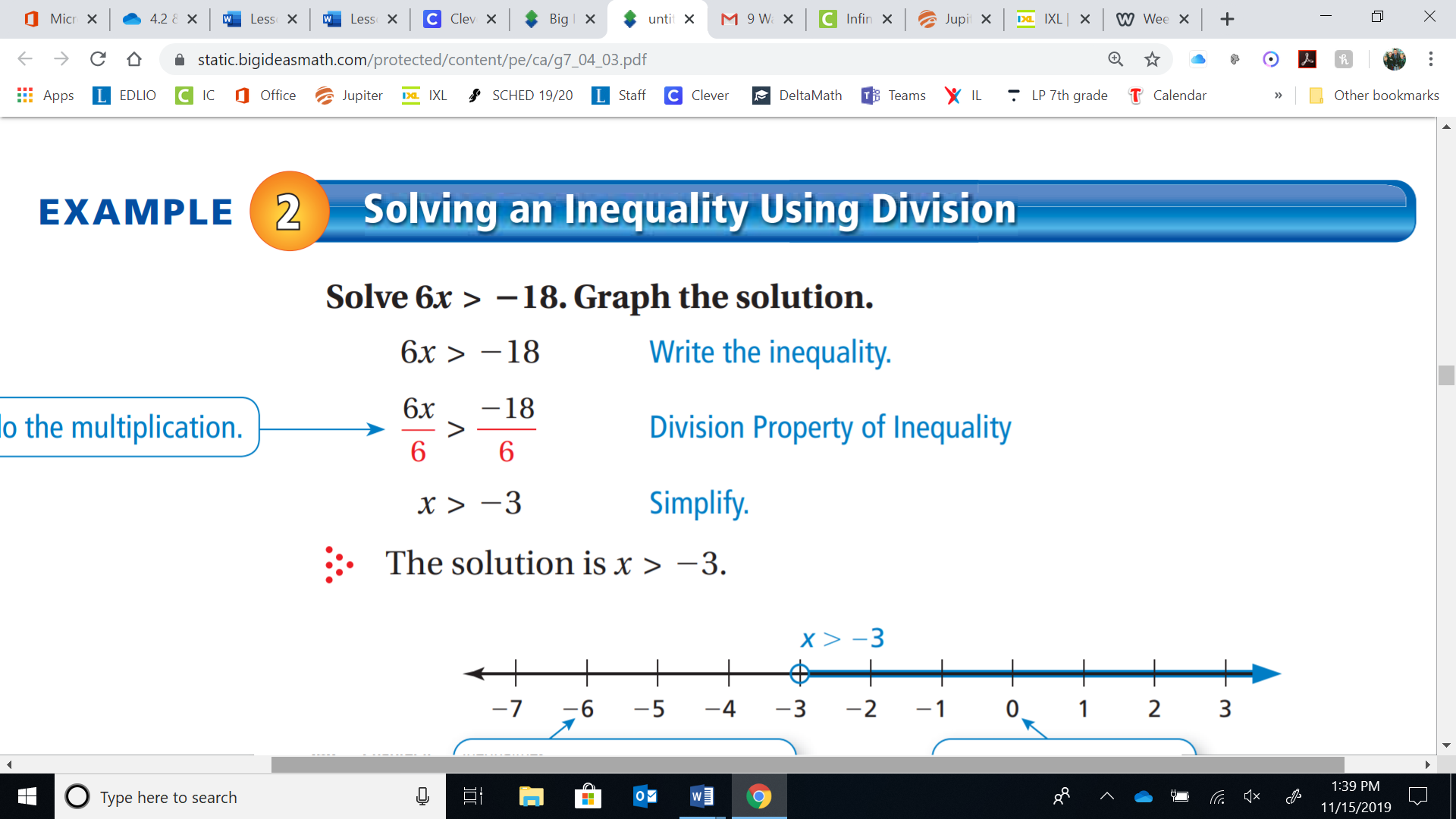
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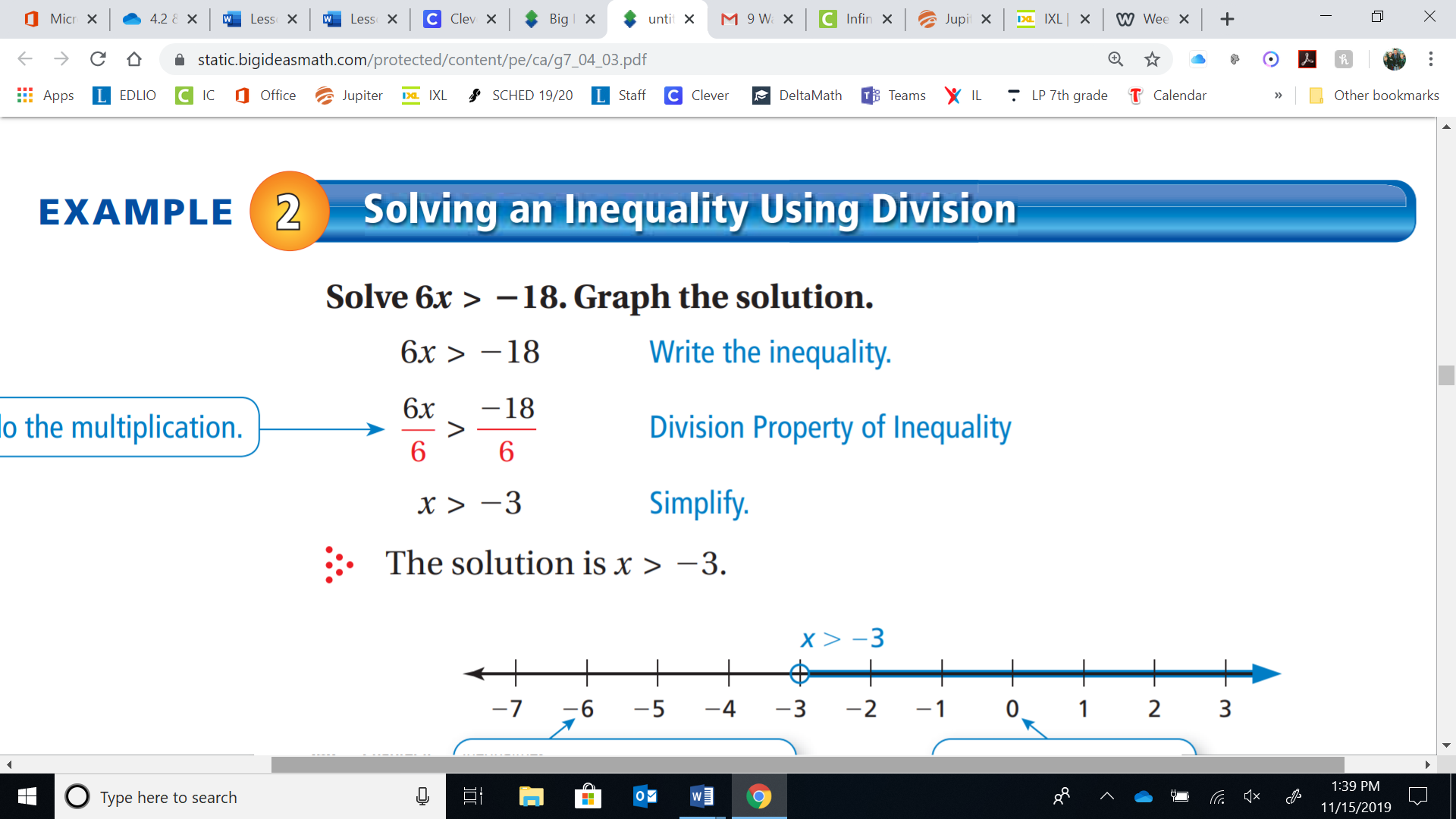
**-4X > 20** DIVIDE BOTH SIDES by

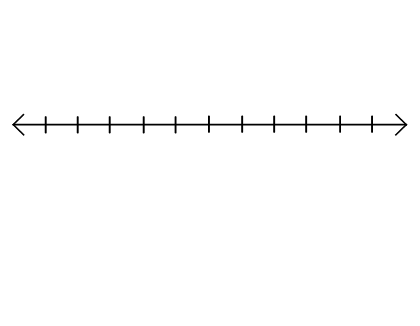
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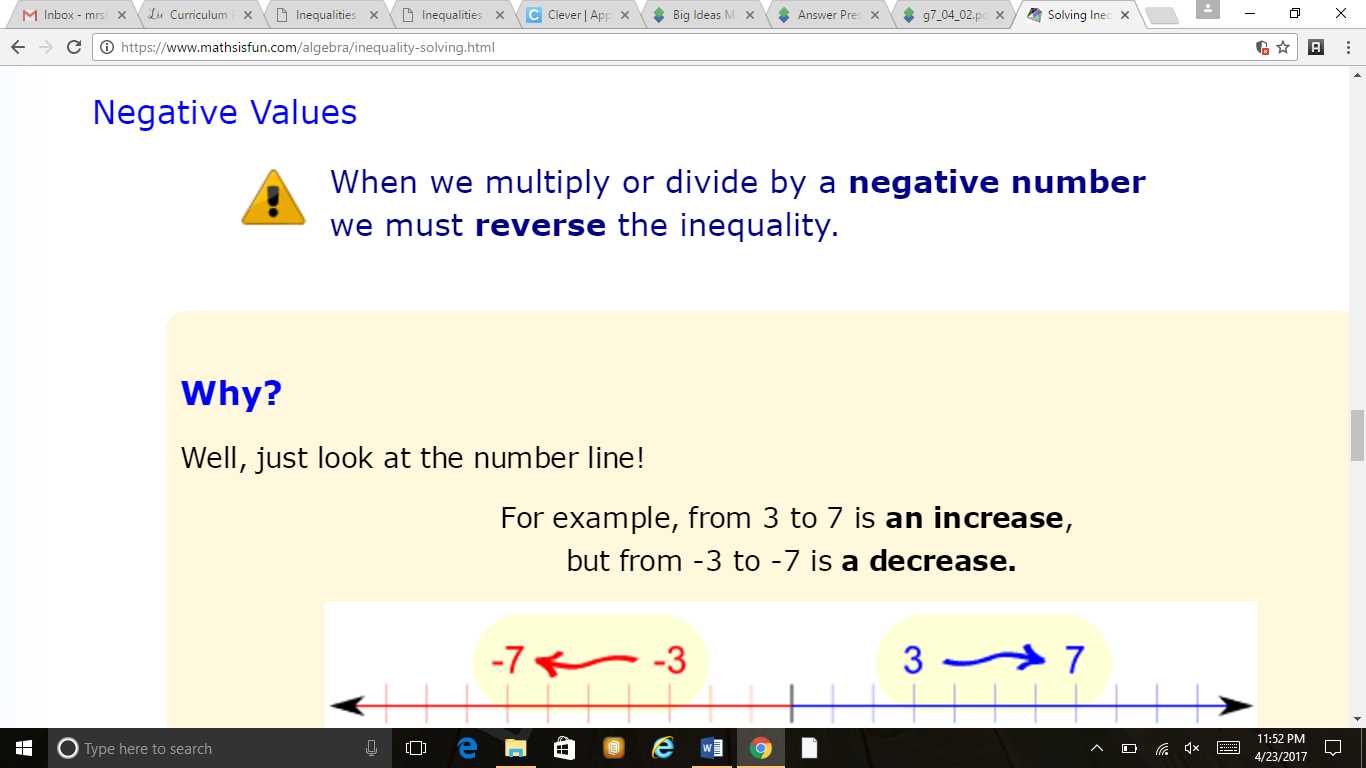








\*\*\*THERE IS ONE DIFFERENCE FROM EQUATIONS!\*\*\*



***EXAMPLE 2:***  **> 5**

**> 5** MULTIPLY BOTH SIDES by

Since we MULTIPLIED by a NEGATIVE number,

we MUST **REVERSE/FLIP** the inequality sign!

