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Writing about Math: Solving a Linear Equation (Responses)

Consider the equation $5x + 7 = 2x + 28$. Explain the steps you would take, in order, to solve the equation for x. Be as specific as possible and write in complete sentences.

$$5x + 7 = 2x + 28$$

Student A: Add 2 to both sides made $2x$ negative bring down 7 = bring positive 28 add 28 to both sides make 28 negative take 28 from positive 7 then bring down $3x$ divide 21 by 3 = x = 7.

Student B: The first thing you do is write your equation. After you put your numbers in place you need to add. Your next step is to subtract and last divide.

Student C: I brought the $2x$ down, then subtracted 2 from the 5 it gave me 3 brought the 7 down. Cancelled the $2x$, brought 28 down. To get 21, I subtracted 7 from 28, my answer was 21 I divided that by 3 and my answer was 7.

Student D: First add all my x's or gather all my x's on one side. I took $2x$ and subtract it from $5x$ and I subtract $2x$ from $2x$ and cross it out. Then I brought the $3x$ down brought down the 7 and the 28. Then I added 7 to 7 and 7 to 28, then I cross out the 7's and added the 28 and 7. Brought down the $3x$ then divided it by $3x \div 3x$ and $35 \div 3$ and got a final answer of 11 and 2/3.

Student E: First bring the $2x$ over to the $5x$ then you add $5x$ and $2x$ that gives you $7x$ then you bring the add sign down and the seven and the equal sign plus 28. Next you take the subtract 7 to both sides you get 21 then you divide $7x$ by $7x$ by 21 by $7x$ then you divide 21 by $7x$ and you get x equals 3.

Student F: You take the $2x$ and place it under the $5x$ and $2x$. Whatever you do to one side you do to the other. Since I have a positive $2x$ I make it a negative. $5x - 2x = 3x$. Place it under the next line and rewrite the equation. $3x + 7 = 28$. I'll take the 28 and put it under the 7 and 28, since my 28 is positive I make it a negative. Cross out my 28 and add $-28 + 7 = 21$. Bring my $3x$ down and divide my 21 by 3 and your answer will be 7.

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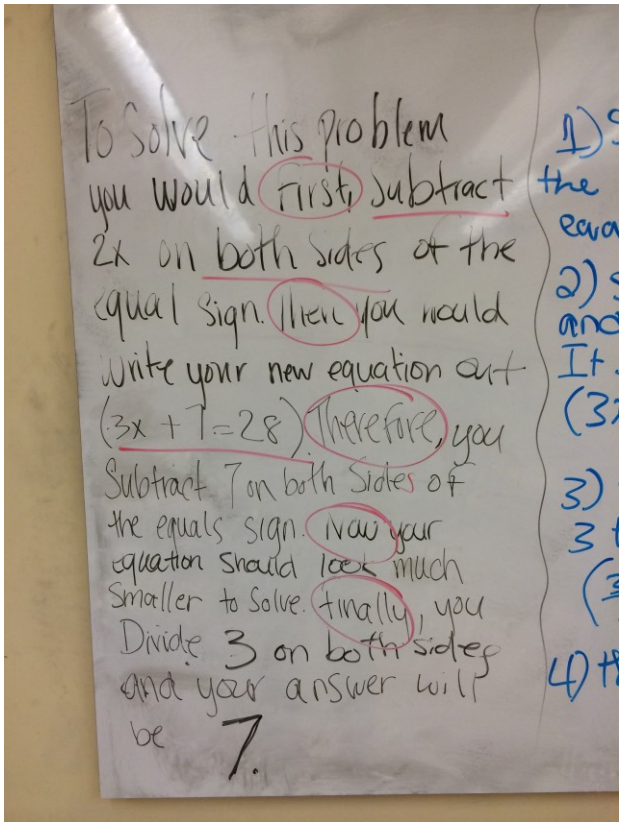
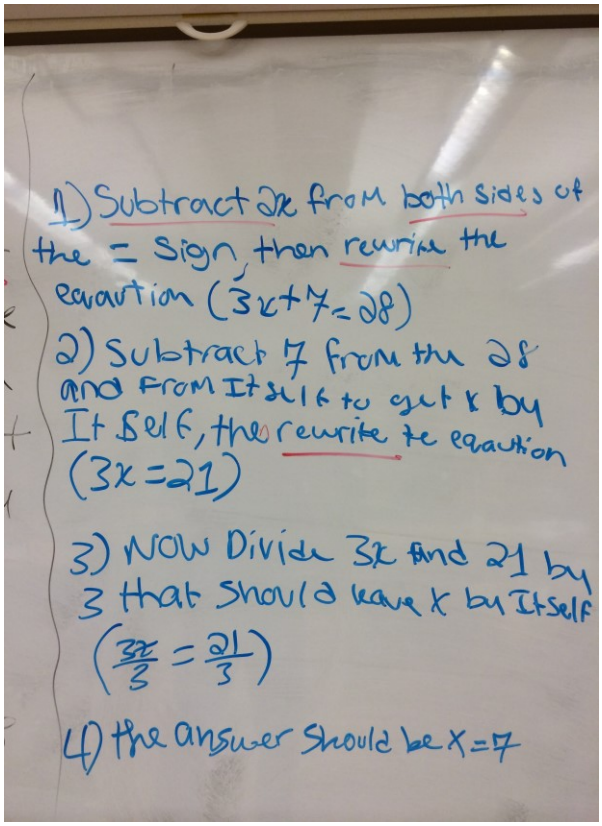
The responses below were written by students who had already done a similar activity once before. How do they compare to the responses on the other side of this handout?



To Solve this problem you would first subtract 2x on both sides of the equal sign. then you would write your new equation out (3x + 7=28) Therefore, you Subtract 7 on both Sides of the equals sign. now your equation should look much Smaller to Solve. finally, you Divide 3 on both sides and your answer will be 7.

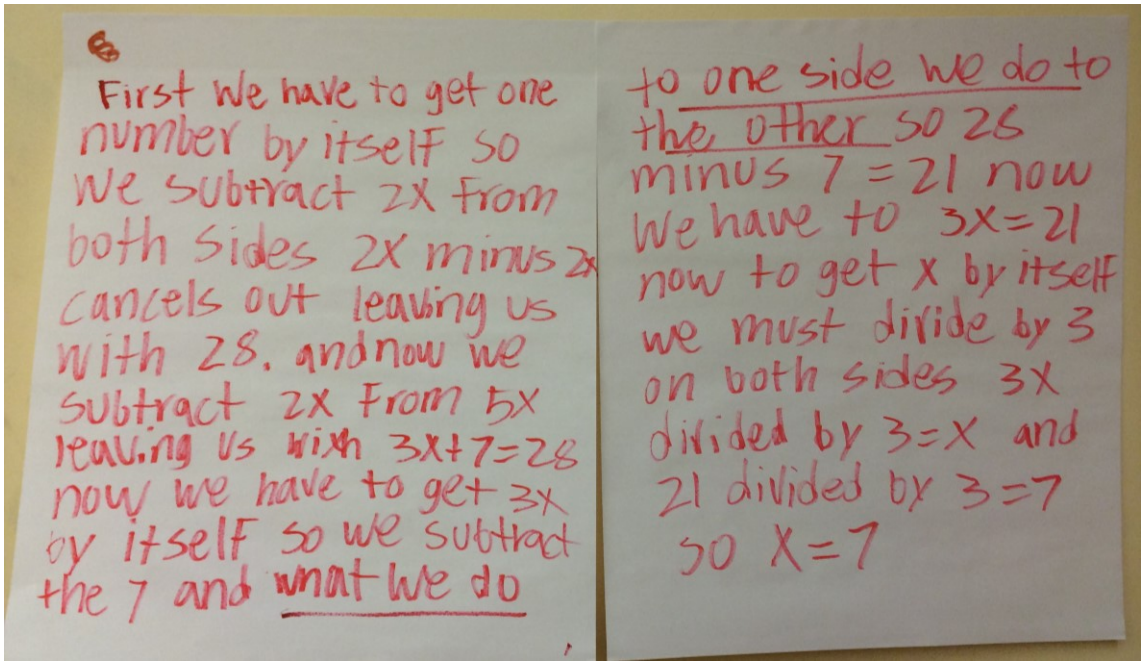


1) Subtract 2x from both sides of the = sign, then rewrite the equation (3x+7=28)

2) Subtract 7 from the 28 and from Itself to get x by Itself, the rewrite te equation (3x=21)

3) Now Divide 3x and 21 by 3 that should leave x by Itself ($\frac{3x}{3}=\frac{21}{3}$)

4) the answer Should be x=7



First we have to get one number by itself so we subtract 2x from both sides 2x minus 2x cancels out leaving us with 28. and now we subtract 2x from 5x leaving us with 3x+7=28 now we have to get 3x by itself so we subtract the 7 and what we do to one side we do to the other so 28 minus 7 = 21 now we have to 3x=21 now to get x by itself we must divide by 3 on both sides 3x divided by 3=x and 21 divided by 3=7 so x=7

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