Name: key

Solving Equations – Is It Correct?

Directions: Don solved the following equations but was having some trouble. In each of the following problems, Don made a mistake. See if you can help Don fix his mistakes. Examine the problem. When you find the mistake, circle it. Then, in the space provided, explain why it is a mistake, and then solve the equation correctly.

Show work!

Don's Work	Explain: What mistake did he make?	Corrected Solution
1. $\frac{-6t}{6} = \frac{30}{6}$ $t = 5$	He divided by 6 not -6.	$t = -5$
2. $\frac{3}{4} \cdot \frac{8}{4}x = 12 \cdot \frac{3}{4}$ $x = 9$	He did not multiply by the reciprocal	$x = 16$
3. $8 - 5c = -37$ $-8 \quad -8$ $\frac{5c}{5} = \frac{-45}{5}$ $c = -9$	He dropped the negative from -5c in the original problem	$x = 9$
4. $\frac{x+1-1}{3} = 2-1$ $3 \cdot \frac{x}{3} = 1 \cdot 3$ $x = 3$	He tried to subtract 1 from the numerator of a fraction, not allowed!	$x = 5$
5. $4x - 3 = 17$ $+3 \quad +3$ $4x = 20$ $-4 \quad -4$ $x = 16$	He subtracted 4 which is not the inverse of multiplication	$x = 5$

6. $3(2x-4)=8$ $6x-4=8$ $+4 \quad +4$ $\frac{6x}{6}=\frac{12}{6}$ $x=2$	He forgot to multiply 3 · -4 when he distributed the 3	$x=\frac{10}{3}$
7. $3x+2x-6=24$ $-2x \quad -2x$ $x-6=24$ $+6 \quad +6$ $x=30$	He used inverse operations on the same side of the equal sign.	$x=6$
8. $5x+1=-2x-8$ $3x+1=-8$ $-1 \quad -1$ $\frac{3x}{3}=\frac{-9}{3}$ $x=-3$	He combined like terms from opposite sides without using inverse operations	$x=-\frac{9}{7}$
9. $-2(x-2)=14$ $-2x-4=14$ $+4 \quad +4$ $\frac{-2x}{-2}=\frac{18}{-2}$ $x=-9$	He multiplied -2 and -2 when he distributed and got -4, not +4.	$x=-5$
10. $3(2x+1)+4=10$ $6x+3+4=10$ $9x+4=10$ $-4 \quad -4$ $\frac{9x}{9}=\frac{6}{9}$ $x=\frac{6}{9}=\frac{2}{3}$	He added 6x and 3 which aren't like terms.	$x=\frac{1}{2}$

Reflect: Which of the mistakes above have you made? Why do you think you have made those mistakes? How will you avoid these common mistakes?