SOLVING LINEAR EQUATIONS COMMON CORE ALGEBRA II HOMEWORK

FLUENCY

1. Solve each of the following linear equations. If the equation is inconsistent, state so. If the equation is an identity, also state so. Reduce any non-integer answers to fractions in simplest form.

(a)
$$7x+5=2x-35$$

 $-2x$ $-2x$
 \Rightarrow $5x+5=-35$
 -5

(b)
$$\frac{x}{3} - 7 = -5$$

 $+7 + 7$
 $\Rightarrow \frac{x}{3} = 2 \cdot 3$

(c)
$$4x+5=4x-1$$

 $-4x$ $-4x$
 $5\neq -1$
in consistent

(d)
$$\frac{5(x-3)}{2} - 1 = 14$$

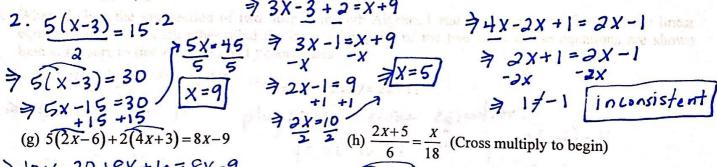
(e)
$$3(x-1)+2=x+9$$

(f)
$$4x - (2x-1) = x+5+x-6$$

2.
$$5(x-3) = 15.2$$

 $\Rightarrow 5(x-3) = 30$
 $\Rightarrow 5x-15=30$
 $\Rightarrow 5x-15=30$

$$\frac{1}{2} \frac{3x-1=x+9}{-x}$$
 $\frac{1}{2} \frac{1}{2} \frac{$



$$\Rightarrow 10 \times -30 + 8 \times + 6 = 8 \times -9$$

$$\Rightarrow 18 \times -24 = 8 \times -9$$

$$-8 \times -8 \times -8 \times -8 \times -9$$

$$\Rightarrow 10 \times -24 = -9$$

$$\Rightarrow 1$$

$$7 18(2x+5) = 6x$$

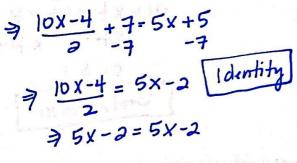
$$7 36x + 90 = 6x$$

$$7 36x - 36x$$

$$7 90 = -30x$$

$$-30$$

$$(j) 18-2(x+7) = \frac{8x-20}{2}-2$$





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APPLICATIONS

 $(x) \qquad (add) \qquad (x) \qquad 5(x+2)$

2. Laura is thinking of a number such that the sum of the number and five times two more than the number is 26 more than four times the number. Determine the number Laura is thinking of.

we than four times the number. Determine the number Laura is difficulty of the number of the number

3. As if #2 wasn't confusing enough, Laura is now trying to come up with a number where three less than 8 times the number is equal to half of 16 times the number after it was increased by 1. She can't seem to find a number that works. Explain why.

 $\therefore 8X-3 = \frac{|U(X+1)|}{2}$ $\Rightarrow 8X-3 = \frac{|U(X+1)|}{2}$

4. When finding the intersection of two lines from both Algebra I and Geometry, you first "set the linear equations equal" to each other. Find the intersection point of the two lines whose equations are shown below. Be sure to find both the x and y coordinates.

below. Be sure to find both the x and y coordinates.

Set the equations equal y=5x+1 and y=2x-11 $\Rightarrow 5x+1=2x-11$ $\Rightarrow 5x+1=2x-11$ $\Rightarrow 10x+1=11$ $\Rightarrow 10x$

5. Explain why you cannot find the intersection points of the two lines shown below. Give both an algebraic reason and a graphical reason. y=4x+1 and y=4x+10

the two lines are in slope-intercept
form J=mY+b. They have the $1 \neq 10$ Same slope (4) that but different J-intercepts (1 \neq 10). Therefore,
they are purallel lines and do not
intersect.

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