Notes: U1AL4 The Distributive Property Name: _____ HR: _____

Ur notes and questions

Target Skill(s): Solve equations using the distributive property when indicated to simplify expressions before solving.

The Distributive Property of Multiplication over addition or subtraction.

$a \cdot (b+c) = a(b+c) = a \cdot b + a \cdot c$ } Dist. Prop. of * over addition

$ab + ac$

$a(b-c) = a \cdot b - a \cdot c$ (sub)

$ab - ac$

Mult. Rules

$+ \cdot + = +$

$- \cdot - = +$

Directions: Simplify the following.

I do	We do	You do
1. $3(x+5) = 3 \cdot x + 3 \cdot 5$ $= 3x + 15$	2. $6(5x-2) = 6 \cdot 5x - 6 \cdot 2$ $30x - 12$	3. $-4(3x-6) = -4 \cdot 3x - -4(6)$ $= -12x - -24$ $= -12x + 24$
4. $-\frac{1}{2}(x+6) = -\frac{1}{2}x - 3$ $-\frac{1}{2}x + -\frac{1}{2} \cdot 6$ $-\frac{1}{2}x - 3$	5. $-5(8-3x) = -5 \cdot 8 - -5 \cdot 3x$ $= -40 + 15x$ $-40 + 15x$	6. $\frac{3}{4}(2x+5) = \frac{3}{4} \cdot 2x + \frac{3}{4} \cdot 5$ $= \frac{6x}{4} + \frac{15}{4}$ $= \frac{3x}{2} + \frac{15}{4}$ $= 1.5x + 3.75$

Directions: Solve the following equations.

7. $2(3x+4) = 26$ $6x + 8 = 26$ $-8 \quad -8$ $\frac{6x}{6} = \frac{18}{6}$ $x = 3$	8. $-20 = -5(x-1)$ $-20 = -5x + 5$ $-5 \quad -5$ $\frac{-20}{-5} = \frac{-5x}{-5}$ $4 = x$ $x = 4$	9. $18 = -6(2x+1)$ $18 = -12x - 6$ $+6 \quad +6$ $\frac{24}{-12} = \frac{-12x}{-12}$ $-2 = x$ $x = -2$

10. $2(3x+1)+4=16$	11. $5(2x+1)-x=29$	12. $35=3+4(3x+2)$

10. $2(3x+1)+4=16$

$6x+2+4=16$

$6x+6=16$

$-6 \quad -6$

$\frac{6x}{6}=\frac{10}{6}$

$x=\frac{10}{6}$

$x=5/3$

11. $5(2x+1)-x=29$

$10x+5-x=29$

$10x-1x+5=29$

$9x+5=29$

$-5 \quad -5$

$\frac{9x}{9}=\frac{24}{9}$

$x=24/9=8/3$

12. $35=3+4(3x+2)$

$35=3+12x+8$

$35=12x+11$

$-11 \quad -11$

$\frac{24}{12}=\frac{12x}{12}$

$2=x$

$x=2$