U3 L11 HW Key Combining Like Terms

Name: _____ Date: _____

1. Select **all** the statements that are true. Be prepared to explain your reasoning.

a) $4 + -2(3 + 7) = 4 + -2 \cdot 3 + -2 \cdot 7$ (-16)

b) $4 + -2(3 + 7) = 4 - 2 \cdot 3 + 2 \cdot 7$ (12, no)

c) $4 + -2(3 + 7) = 4 - (2 \cdot 3 + 2 \cdot 7)$ (-16)

$4 + -2(3+7) = 4 + -2(3) + -2(7)$

$4 + -6 + -14$

$4 + -6 + -14$

$-2 + -14 = -16$

2. Select **all** expressions that are equivalent to $5x - 15 - 20x + 10$.

a) $5x + -15 + -20x + 10$

b) $5(x + -3 + -4x + 2)$

c) $-15x - 5$

d) $-5(3x + 1)$

They are all equivalent

$5x + -15 + -20x + 10$

$5x + -20x + -15 + 10$

$-15x + -5$

3. Simplify the expression. Show all work.

$-7 + 6(x + 4)$ $= -7 + (6x) + 6(4)$

$-7 + 6x + 24$

$-7 + 24 + 6x$

$17 + 6x$ or $6x + 17$

4. Evaluate your answer from #3 when x = −2. Show all work.

$17 + 6x$

$17 + 6(-2)$ $17 + -12 = 5$

5. Simplify the expression. Show all work.

$2^3 = 2 \cdot 2 \cdot 2 = 8$

$2^3 + 4(3 + y) - 2.7y$

$8 + 4(3) + 4(y) + -2.7y$ $8 + 12 + 4y + -2.7y$

$20 + 1.3y$

6. Evaluate your answer from #5 when y = 0.8

$20 + 1.3y$

$20 + 1.3(0.8)$

$20 + 1.04 = \boxed{21.04}$

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7. Simplify the expression. Show all work.

$-2x + 5y + 3(x + -6) - 2y$

$-2x + 5y + 3(x) + 3(-6) + -2y$

$-2x + 5y + 3x + -18 + -2y$

$-2x + 3x + 5y + -2y + -18$

$1x + 3y + -18$

8. Simplify the expression. Show all work.

$\frac{1}{8}x - 2\frac{1}{4}y + 2(\frac{3}{8}x - \frac{1}{2}y)$

$\frac{1}{8}x + -2\frac{1}{4}y + 2(\frac{3}{8}x) - 2(\frac{1}{2}y)$

$\frac{1}{8}x + -2\frac{1}{4}y + \frac{6}{8}x + -1y$

$\frac{1}{8}x + \frac{6}{8}x + -2\frac{1}{4}y + -1y$

$\frac{7}{8}x + -3\frac{1}{4}y$

9. Factor the expressions.

$\frac{6y}{2} - \frac{14}{2} = 2(3y - 7)$

$3x + 5x =$ $x(3+5)$ or $x(8)$ or $8x$.

10. Ms. Mule took her 3 kids to Six Flags Amusement Park. She bought 1 adult ticket, 3 child tickets, 2 sweatshirts for the girls, and a baseball hat for her son.

Write an expression to represent the total amount she spent if A represents the adult ticket price, C represents the child ticket price, W represents the price of a sweatshirt, and H represents the price of a hat.

Evaluate to find out how much Ms. Mule spent that day if
A = $55
C = $40.75
W = $20.25
H = $12.99

$= 1A + 3C + 2W + 1H$

$= 1(55) + 3(40.75) + 2(20.25) + 1(12.99)$

$= 55 + 122.25 + 40.50 + 12.99$

$= \$230.74$