11-30-17

Aim: SWBAT review.

Do Now: Last page # 1 - 6

HW: Test tomorrow

AIM: SWBAT review simplifying expressions with rational numbers and factoring.

DO NOW:
Factor the following expressions, then evaluate each expression when x = 2 and y = -3.

1) $16 + 24x$ 2) $15 - 35y$ 3) $6y + 9xy$

CLASSWORK:
Simplify each expression.

1) $-5.2 + 8.41y - 1.3 + 4.75y$

$13.16y - 6.5$

2) $\frac{2}{3}x - \frac{1}{2} + \frac{1}{4}x - \frac{1}{7}$

$\frac{11}{12}x - \frac{9}{14}$

3) $\frac{1}{4}(12x - 24) - 8x - 15$

$3x(-6) - 8x(-15)$

$-5x - 21$

4) $0.5(-60x - 8) + 47x - 16$

$-30x(-4) + 47x(-16)$

$17x - 20$

5) $-15x - \frac{1}{7}(-42x + 70) - 3$

$-15x + 6x(-10)(-3)$

$-9x - 13$

6) $-10x - \frac{2}{3}(-12x + 6) - 12$

$-10x + 8x(-4)(-12)$

$-2x - 16$

HOMEWORK - FACTORING

Find the GCF of each pair of terms.

1) n and 5n

n

2) 12c and 24d

12

3) 2a and 8

2

4) 14x and 21xy

7x

FACTOR each expression. If the expression cannot be factored, write cannot be factored. When you factor an expression, your final answer should look like the Distributive Property.

5) n + 5n

$n(n+5)$

6) 12c - 24d

$12\left(\frac{12c}{12} - \frac{24d}{12}\right)$

$12(c-2d)$

7) 2a + 8

$2(a+4)$

8) 14x - 21xy

$7x(2-3y)$

9) 3a + 9ab

$3a(1+3b)$

10) 6d - 9cd

$3d(2-3c)$

11) 12x + 25y

cannot be factored

12) 24x + 30xy

$6x(4+5y)$

13) 30 + 42y

$6(5+7y)$

14) 40x - 60

$20(2x-3)$

15) 100xy + 75xyz

$25xy(4+3z)$

16) 4x - 7

cannot be factored

SIMPLIFY each expression using the Distributive Property.

17) 3(-4x + 8)

$-12x+24$

18) $\frac{1}{2}(6x + 14)$

$3x+7$

19) -4(4x - 5)

$-16x+20$

20) $\frac{3}{5}(15x - 45)$

$9x-27$

AIM: SWBAT use properties to justify the steps when simplifying an expression.

DO NOW:
Factor each expression. If the expression cannot be factored, write cannot be factored.

1) $3c + 6d$ _____ 2) $3a + 7a$ _____

3) $24x + 48y$ _____ 4) $4x + 18y$ _____

5) $4x + 28$ _____ 6) $9x + 15$ _____

7) $22xy + 26xz$ _____ 8) $15x + 28y$ _____

9) $13x + 26$ _____ 10) $25xy + 55xy$ _____

CLASSWORK:
While you might not realize it, you are using your properties (Associative, Commutative, Distributive, etc.) when you simplify an expression. It is important to understand each step and why you are allowed to do it. We call this **justifying our steps**.

C L T

Simplify the expression: $(11k + 5) + (2k + 13)$ * Justify each step*

$11k + 5 + 2k + 13$	The Original Expression
$11k + 2k + 5 + 13$	Commutative Property (allows us to switch the order of the terms)
$(11k + 2k) + (5 + 13)$	Associative Property (allows us to switch the grouping of the terms)
$13k + 18$	Combine like terms (allows us to add 11k and 2k as well as 5 and 13)

1) The following expression is simplified below: $4s + 5r - 3s + 4r$ * Justify each step*

$4s + 5r - 3s + 4r$	The Original Expression
$4s - 3s + 5r + 4r$	Commutative Property
$(4s - 3s) + (5r + 4r)$	Associative Property
$s + (5r + 4r)$	Combine Like Terms
$s + 9r$	Combine Like Terms

2) The following expression is simplified below: 5(4m + n) − 2n * Justify each step*

5 (4m + n) − 2n	The Original Expression
20m + 5n − 2n	Distributive Property
20m + (5n − 2n)	Associative Property
20m + 3n	Combine Like Terms

3) The following expression is simplified below: 7x − 2 + 7x + 6 * Justify each step*

7x − 2 + 7x + 6	The Original Expression
7x + 7x − 2 + 6	Commutative Property
(7x + 7x) − 2 + 6	Associative Property
14x − 2 + 6	Combine Like Terms
14x + (−2 + 6)	Associative Property
14x + 4	Combine Like Terms

Simplify AND factor the given expression. This means, first you should simplify the expression. Then you should factor out the GCF to get your final answer. #4-7

4) 6x + 3x + 15y + 12y

9x + 27y

9(x + 3y)

5) 8d − 2(3d − 4) + 2

8d − 6d + 8 + 2

2d + 10

2(d + 5)

6) −8(2a − 3b) −5(6b − 4a)

+16a + 24b − 30b + 20a

4a − 6b

2(2a − 3b)

7) 10(5g + 2h − 3) − 4(3g − 4h + 2)

50g + 20h − 30 − 12g + 16h − 8

38g + 36h − 38

2(19g + 18h − 19)

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

$\frac{1}{2}x + 4$

9) $\frac{1}{4}x - 10 + \frac{1}{2}x - 14$

$\frac{3}{4}x - 24$

Simplify and factor the given expression. This means, first you should simplify the expression. Then you should factor out the GCF to get your final answer.

7) $6x + 3x + 15y + 12y$

$9x + 27y$

$9(x + 3y)$

8) $8d - 2(3d - 4) + 2$

$8d - 6d + 8 + 2$

$2d + 10$

$2(d + 5)$

9) Find the sum of $9x - 2$ and $-4x - 3$ (Add in order)

Translate: $(9x - 2) + (-4x - 3)$

Simplify: $9x - 2 - 4x - 3$

$5x - 5$

10) Find the result when $13m + 2$ is added to $4m - 14$ (Add in reverse order)

Translate: $(4m - 14) + (13m + 2)$

Simplify: $4m - 14 + 13m + 2$

$17m - 12$

11) Find the difference of $12x + 7$ and $15x + 8$ (subtract in order)

Translate: $(12x + 7) - (15x + 8)$

Simplify: $12x + 7 - 15x - 8$

$-3x - 1$

12) Find the result when $2x + 4$ is **subtracted from $10x - 9$ (subtract in reverse order)

Translate: $(10x - 9) - (2x + 4)$

Simplify: $10x - 9 - 2x - 4$

$8x - 13$