Subtracting Expressions

March 6, 2017

Mr. Collin

Announcements

- I will be here after school today and Wednesday
- End of Grading Period on Friday
- Test will be next Wed/Thu

Subtracting Expressions

- We will review this from last week
- Remember, to subtract expressions, we will distribute the negative sign

Subtracting Expressions

- Let's do one together:

$$(3a + 7b - 4) - (-a + 4b - 4)$$

$3a + 7b - 4 + a - 4b + 4$

$4a + 3b$

Now You Try

Subtract the following:

1) $(3p + 6q) - (p + 2q)$

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

3) $(10s - t) - (-2s + 4t - 2)$

4) $(4x - 3y + z) - (2x - 3y)$

5) $(6m + 7) - (-3n - 4)$

Let's Mix It Up

Now you will add or subtract:

1) $(3a + 4b) + (2a - 5b)$ 5a − b

2) $(5x - 4y + 2) - (4x + 6y - 3)$ x − 10y + 5

3) $(3r - 2s) - (2r + 6s + 4)$ r − 8s − 4

4) $(7h - 3k) + (-4h + 4k)$ 3h + k

5) $(9c - 4d + 2) - (10c + d - 7)$ −c − 5d + 9

Putting It All Together

Let's use what we know to simplify a more difficult one:

$$3(4a + 2b) - 2(5a - 6b)$$

$12a + 6b - 10a + 12b$

$2a + 18b$

Now You Try

Simplify the following:

$$-4(x+2y)+2(3x-y)$$

$-4x-8y+6x-2y$

$2x-10y$

Factoring Expressions

March 7, 2017

Mr. Collin

Warmup

Simplify the following:

1) $(3a + 2) - (-2a + 4)$ $5a - 2$

2) $(2x + 7y) - (3x - 2y)$ $-x + 9y$

3) $(3m + 5) + 2(m + 2)$ $3m + 5 + 2m + 4 = 5m + 9$

4) $4(2r + 5) - 3(2r + 7)$

$8r + 20 - 6r - 21 = 2r - 1$

Trade and Grade

- If you received a stamp, you will trade your homework with the person sitting next to you (or someone else near you)
- When you get another person's homework, write your name in the "Corrected By" line at the bottom

Trade and Grade

1) $-c - 9d$
2) $k + 10$
3) 2
4) $6x - 8y$
5) $-9a + 6b$
6) $8s$
7) $g - 4h + 14$
8) $2m + 3n + 3$
9) $2n + 10$
10) $5n + 3$
11) $8n - 3$
12) $6n - 2$
13) $3n$
14) $3n - 6$
15) $-4n + 21$
16) $-6n + 3$

Trade and Grade

- If nine or more answers are correct and there is a stamp on the page, write "4" in the score box
- If eight or fewer answers are correct, then write "2" in the score box

Factoring Expressions

- Just like factoring a number, when we factor an expression, we are trying to find what gets multiplied together to make it

Factoring Expressions

- Factoring an expression is much like undoing the distributive property
- Example: $3x + 6y$

$3(x+2y)$

$12a+30b-24$

GCF = 6

$6(2a+5b-4)$

Let's Try One More Together

- This one is a little trickier:

$$16a^2 + 12ab - 10b^2$$

$$2(8a^2+6ab-5b^2)$$

Now You Try

- Factor each of the following:

1) $6c - 8d$ $2(3c-4d)$

2) $15a + 25$ $5(3a+5)$

3) $24x^2 + 36y^2$ $12(2x^2+3y^2)$

4) $28gh - 21g^2 + 35h$ $7(4gh-3g^2+5h)$

5) $60m + 20n - 10$ $10(6m+2n-1)$

Special Case

- Let's try to factor this one:

$$8c + 9d$$

Prime

Factoring Expressions

March 8/9, 2017

Mr. Collin

Warmup

Factor the following:

1) $12x + 15y$ $3(4x+5y)$

2) $30h - 20k + 45$ $5(6h-4k+9)$

3) $18a - 12b$ $6(3a-2b)$

4) $20m - 9n$ Prime

5) $24c + 36d - 12$ $12(2c+3d-1)$

Trade and Grade

- If you received a stamp, you will trade your homework with the person sitting next to you (or someone else near you)
- When you get another person's homework, write your name in the "Corrected By" line at the bottom

Trade and Grade

1) $3(a + 4b)$
2) $5(3k - 5)$
3) $10(2x - 5y)$
4) $2(12m + 5n)$
5) $6(6y + 5)$
6) prime
7) $4(3c - 5d^2)$
8) $12(2x^2 - 3y^3)$
9) $x + 13y$
10) $6a - 7b$
11) $4r + 17$
12) $6c$
13) $y + 7z$
14) $2r^2 + 14r$

Trade and Grade

- If eight or more answers are correct and there is a stamp on the page, write "4" in the score box
- If seven or fewer answers are correct, then write "2" in the score box

Factoring Expressions

- Sometimes, we can factor more than just a number

$a^2 \div a^1$

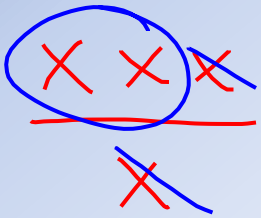
$35a^2 + 20ab$

$5a(7a + 4b)$

One More Together

This one is a little trickier:

$$20x^3y^2z + 12xy^4z^5 - 18x^2y^7$$



$$2xy^2(10x^2z + 6y^2z^5 - 9xy^5)$$

Now You Try

- Factor the following:

$$18c^2d^1 - 30c^1d^3$$

$$6cd(3c - 5d^2)$$

On Your Own

Factor each of the following:

1) $16mn - 24m$

2) $14x^2y + 35y^4$

3) $20st + 35s^2$

4) $14m^2 + 22n^3$

5) $32a^2b - 12ab^3 + 20a^5b^2$

A Bit More Challenging

Factor each of the following:

1) $12x^2 - 8xy^3 + 15x^3y$ $x(12x - 8y^3 + 15x^2y)$

2) $8a^2 + 14ab - 5b^2$ Prime

3) $14p^4 + 21p^2q - 42p^5q^3$ $7p^2(2p^2 + 3q - 6p^3q^3)$

4) $16r^3st - 8r^2t + 9s^4$ Prime

5) $18c^3d - 36c^4d^3 + 27c^5d^2$

$9c^3d(2 - 4cd^2 + 3c^2d)$

Review of Sequences

- Let's refresh how to find the nth term of an arithmetic sequence

$-4n+18$

14, 10, 6, 2, −2, …

Now You Try

What is the value of the nth term of each arithmetic sequence shown?

1) 18, 24, 30, 36, 42, … $6n+12$

2) 5, 11, 17, 23, 29, … $6n-1$

3) 0, 12, 24, 36, 48, … $12n-12$

4) 1, –4, –9, –14, –19, … $-5n+6$

Similar Problems

Now write the first five terms of the sequence expressions shown:

1) $5n + 2$ 7, 12, 17, 22, 27

2) $n + 7$ 8, 9, 10, 11, 12

3) $-2n + 8$ 6, 4, 2, 0, -2

4) $-n + 2$ 1, 0, -1, -2, -3

5) $4n - 11$ -7, -3, 1, 5, 9

6) $-3n - 4$ -7, -10, -13, -16, -19