

11-29-17

Aim: SWBAT continue to factor an expression AND SWBAT justify steps when simplifying expressions.

HW: Finish WS

Test Friday

Do Now: Find the GCF.

1. $5x$ and $35xy$

$5x$

2. $2xyz$ and $16x^2$

$2x$

3. 25 and $75x$

25

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

$9x - 27$

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) $15a + 25b$

6) $9x - 27xy$

7) $24y + 16$

8) $13x - 9y$

$$8(3y + 2)$$

9) $25x - 100$

10) $8x + 12$

11) $18xy + 6y$

12) $4ab + 12a - 10$

$$25(x - 4)$$

$$4(x + 3)$$

$$6y(3x + 1)$$

$$2(2ab + 6a - 5)$$

13) $-6x + 12$

$\sqrt[6]{12}$

14) $7x - 15y$

15) $-9x + 24$

$\sqrt[9]{24} \times$

16) $6xy + 13xz$

$$6\left(-\frac{6x}{6} + \frac{12}{6}\right)$$

cannot
be

$$3(-3x + 8) \sqrt[3]{24}$$

$$6(-x + 2)$$

factored

↑
GCF

17) $15a - 12$

18) $x^2 - 8x$

19) $15a - 20b + 10c$

20) $12ab + 18ac$

$$3\left(\frac{15a}{3} - \frac{12}{3}\right)$$

$$5\left(\frac{15a}{5} - \frac{20b}{5} + \frac{10c}{5}\right) \quad 6a\left(\frac{12ab}{6a} + \frac{18ac}{6a}\right)$$

$$3(5a - 4)$$

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

21) $36x + 24$

22) $4x + 9$

23) $14x - 16y$

24) $18c - 30cd$

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, **CLT** 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**.

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 |
|  | $4s - 3s + 5r + 4r$ | <u>Commutative Property</u> |
|  | $(4s - 3s) + (5r + 4r)$ | <u>Associative Property</u> |
|  | $s + (5r + 4r)$ | <u>Combine Like Terms</u> |
|  | $s + 9r$ | <u>Combine Like Terms</u> |

