11-26-18

Aim: SWBAT factor an expression to look like the Distributive Property.

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Test Wednesday

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Aim: SWBAT factor an expression to look like the Distributive Property.

15: 1, 3, 5, 15

Do Now: Simplify each fraction using the Greatest Common Factor (the GCF).

1) $\frac{15}{25} = \frac{3}{5}$ GCF: 5

2) $\frac{18}{27} = \frac{2}{3}$ GCF: 9

3) $\frac{20}{40} = \frac{1}{2}$ GCF: 20

4) $\frac{30}{36} = \frac{5}{6}$ GCF: 6

CLASSWORK:

Like all mathematical statements with the same value, the Distributive Property also works in reverse. When it is completed in reverse, the process is called factoring. The purpose is to get the statement back to a single term times a sum or difference.

$ab + ac = a(b + c)$ $ab - ac = a(b - c)$

To factor out a GCF:

1) Find the GCF of ALL terms in the expression.

2) Divide each term of the expression by the GCF.

3) Rewrite the expression as the product of the GCF and the remaining factors.

Example 1: Factor $8x + 12$

8: 1, 2, 4, 8

GCF: 4

Divide each term by the GCF:

$\frac{8x + 12}{4 \quad 4}$

Rewrite as the product of the GCF and the remaining factors:

$4(2x + 3)$

GCF remaining factors

$4(2x+3)$

$8x + 12$

16: 1, 2, 4, 8, 16

Example 2: Factor $24y + 16$

GCF: 8

Divide each term by the GCF:

$\frac{24y + 16}{8 \quad 8}$

Rewrite as the product of the GCF and the remaining factors:

$8(3y + 2)$

GCF remaining factors

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Example 3: Factor: 15a + 25b

15: 1, 3, 5, 15

GCF: 5

Divide each term by the GCF:

$\frac{15a}{5} + \frac{25b}{5}$

Rewrite as the product of the GCF and the remaining factors:

$5(3a + 5b)$

GCF · remaining factors

Example 4: Factor 25x – 100

GCF: 25

Divide each term by the GCF:

$\frac{25x}{25} - \frac{100}{25}$

Rewrite as the product of the GCF and the remaining factors:

$25(x - 4)$

GCF · remaining factors

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) $\frac{18xy}{6y} + \frac{6y}{6y}$

GCF: 6y

$6y(3x + 1)$

6) $\frac{9x}{9x} - \frac{27xy}{9x}$

$9x(1 - 3y)$

* 7) $\frac{4ab}{2} + \frac{12a}{2} - \frac{10}{2}$

4: 1, 2, 4

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

* 8) $13x - 9y$

9: 1, 3, 9

cannot be factored

* 9) $\frac{-6x}{6} + \frac{12}{6}$

6: 1, 2, 3, 6

$6(-x + 2)$

10) $\frac{-9x}{3} + \frac{24}{3}$

$3(-3x + 8)$

11) $\frac{6xy}{x} + \frac{13xz}{x}$

$x(6y + 13z)$

12) $\frac{15a}{3} - \frac{12}{3}$

$3(5a - 4)$

13) $7x - 15y$

cannot be factored

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14) $15a - 20b + 10c$

15) $12ab + 18ac$

16) $xy - 8x$

17) $36x + 24$

18) $14x - 16y$

19) $30cd - 18c$

HOMEWORK – FACTORING

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.

20) $mn + 5n$

21) $12c - 24d$

22) $2a + 8$

23) $-21xy + 14x$

24) $3ab + 9a$

25) $6cd - 9d$

26) $12x + 25y$

27) $24xy + 30x$

28) $42y + 30$

29) $40x - 60$

30) $100xyz + 75xy$

31) $4x - 7$