

Accelerated Math Notes

Factor Linear Expressions (Lesson 7-5)

To **factor** an expression means...

"Please make me into a multiplication problem"

Factor $8x + 12$

*Think what is the GCF of 8 and 12? (4)

*Use this as first factor, (+) for second factor.

$$(GCF)(\quad + \quad)$$

$$4(2x + 3)$$

*Use distributive property to work backwards to find what must go in the parentheses.

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Find the **GCF** of each pair of monomials:

↓
Greatest Common Factor

54ab, 81a

$(27a)$

18, 30m

(6)

$5 \cdot 5$ $5 \cdot 8$

125xy, 40y

$(5y)$

100xyz, 75xy

$(25xy)$

50j, 30k

(10)

$a \cdot a$ a
56a²b, 24ab

$(8ab)$

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Factor:

$9x + 15$

$3(3x + 5)$
check
 $9x + 15$

$9x + 15x$

Skip

$9x^2 + 15x$

$3x(3x + 5)$

$35x - 49$

$7(5x - 7)$

$8x - 8$

$8(x - 1)$

$24x - 14$

$2(12x - 7)$

*
 $8x - 7$
Not Factorable
Prime

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Find what goes in the () to make these expressions equivalent:

$$5(4x + 3) = 20x + 15$$

$$7x(x - 1) = 7x^2 - 7x$$

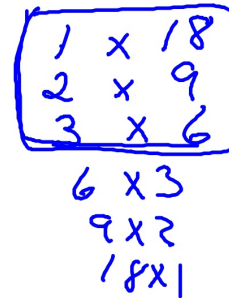
$$20(2x + 3) = 40x + 60$$

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Factor. If Not Factorable, put NF

1) $24x + 8$ $8(3x+1)$	2) $15ab + 30b$ $15b(a+2)$	3) $4x - 9$ NF
4) $12x + 3$ $3(4x+1)$	5) $16a - 12b$ $4(4a-3b)$	6) $3x - 3$ $3(x-1)$

The area of a rectangle is 18 square inches. Find all possible whole number dimensions of the rectangle.



The area of a rectangle is $(8x - 12)$ square inches. Find possible dimensions for the rectangle.

- 1 $(8x-12)$
- 2 $(4x-6)$
- 4 $(2x-3)$ ↑

A square has a perimeter of $(12a + 40)$ inches. Find the length of a side.



$$P = 12a + 40$$

$$S = \frac{1}{4}(12a + 40)$$

$$= 3a + 10$$

Find the total area for the large rectangle. Write the total area as an expression in factored form.

$A=24 \text{ in}^2$	$A=40x \text{ in}^2$	$A=8 \text{ in}^2$
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Total Area

$$24 + 40x + 8$$

$$40x + 32$$

$$8(5x + 4)$$

GLF