

Get out your homework and start checking your answers. We will have a quiz tomorrow!

Classwork - Quiz Review

1) Find the Greatest Common Factor of terms listed below.

A) $42a$ and 27

$$GCF = 3$$

B) $16xy$ and $32x$

$$16x$$

C) 45 and $15n$

$$15$$

D) $26g$ and $65g$

$$13g$$

E) $18cd$ and $30cd$

$$6cd$$

F) $12b$ and 36

$$12$$

G) $56g$ and $84gh$

$$28g$$

H) $42s$ and $28s$

$$14s$$

I) $22mn$ and $11kmn$

$$11mn$$

2) Completely factor each expression and write it in factored form. Use an area model to show your work! If the expression can't be factored write CAN'T BE FACTORED and explain why.

A) $36x + 24$

12	$36x$	$+24$
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$3x + 2$

$12(3x + 2)$

B) $12 - 3x$

3	12	$-3x$
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$4 - x$

$3(4 - x)$

C) $-10x + 20$

10	$-10x$	$+20$
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$-x + 2$

$10(-x + 2)$ or $-10(x - 2)$

D) $14n + 35n$

7	$14n$	$+35$
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$2n + 5n$

$7(2n + 5n)$

E) $7h + 24$

Can't be
Factored

F) $16x - 40$

8	$16x$	-40
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$2x - 5$

$8(2x - 5)$

G) $-13d + 13$

$$13 \left[\begin{array}{|c|c|} \hline -13d & +13 \\ \hline \end{array} \right]$$

$-d \quad +1$

$$13(-d+1) \text{ or } -13(d-1)$$

J) $6j - 16$

$$2 \left[\begin{array}{|c|c|} \hline 6j & -16 \\ \hline \end{array} \right]$$

$3j \quad -8$

$$2(3j-8)$$

$x \cdot y \rightarrow xy$
H) $24xy - 60y$

$$12y \left[\begin{array}{|c|c|} \hline 24xy & -60y \\ \hline \end{array} \right]$$

$2x \quad -5$

$$12y(2x-5)$$

K) $-36s + 27$

$$9 \left[\begin{array}{|c|c|} \hline -36s & +27 \\ \hline \end{array} \right]$$

$-4s \quad +3$

$$9(-4s+3)$$

I) $2abc + bc$

$$bc \left[\begin{array}{|c|c|} \hline 2abc & +bc \\ \hline \end{array} \right]$$

$2a \quad +1$

$$bc(2a+1)$$

L) $9mn - 3m + 21$

$$3 \left[\begin{array}{|c|c|c|} \hline 9mn & -3m & +21 \\ \hline \end{array} \right]$$

$3mn \quad -1m \quad +7$

$$3(3mn-1m+7)$$

1) Simplify the following expressions by combining like terms. Use the Circle/Box method to identify like terms – INCLUDING THE SIGN IN FRONT – then simplify. If you don't think about the + or – sign in front of your term, you will probably not simplify correctly. There should not be any like terms in your final answer.

A) $12x - 8x$

B) $-15 + 6$

C) $5x - 7x + 11$

D) $-3x + 4 - 9$

E) $9c - 4 - 7c$

F) $-10 + 8h - 2$

G) $-5d + 2 + d$

H) $6x - 4x + 5 - 7$

I) $3y + 9 - 7t - 4$

J) $-11 + w - 2 - 3w$

K) $-3p - 5 + 4 - 2p$

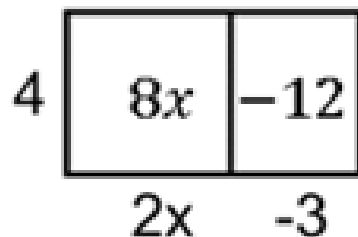
L) $-13 - k + 3 + 6k$

M) $9 - 4z - 11 + 10z$

The Distributive Property

2) The distributive property describes a situation in which a number is being multiplied by an entire expression inside a parenthesis. The multiplication of a number is being shared (distributed) to every term inside the parenthesis.

Area models, like the one shown below are a visual way to show the distribution.



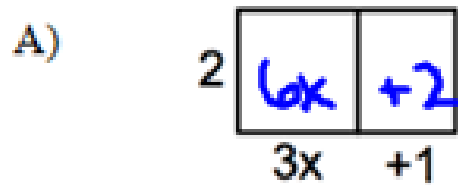
What factored expression does this picture represent? How can you tell you are correct by looking at the picture?

$$4(2x - 3)$$

What expanded expression does the picture represent? How can you tell you are correct by looking at the picture?

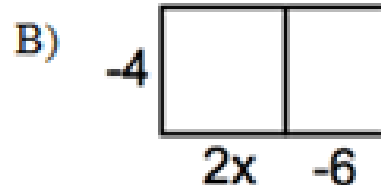
$$8x - 12$$

3) Look at the following area models and complete and write the factored and expanded form of the expression.



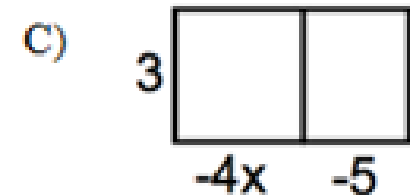
Factored: $2(3x+1)$

Expanded: $6x+2$



Factored:

Expanded:



Factored:

Expanded:

4) Use the distributive property on the expressions below. Use an area model for the factored part of the expression to find the expanded form of the expression. If needed, simplify like terms after using the distributive property.

A) $4(2x + 3)$

B) $-3(x + 2)$

C) $4(-2x - 5)$

$$D) -4(-3x - 1)$$

$$E) 3(2x - 2)$$

$$F) -2(1x - 3)$$

$$G) 3(x + 2) + 7$$

$$H) -2(3x + 2) + 8x$$

$$I) -2(x - 4) + 4x - 10$$

Handwritten work for problem I:

$$-2 \boxed{-2x + 8}$$

Labels: x under $-2x$, -4 under $+8$

$$\text{Circles: } (-2x) \text{ and } (+8)$$
$$\text{Boxes: } (-2x) \text{ and } (+8)$$
$$\text{Circles: } (+4x) \text{ and } (-10)$$
$$\text{Final result: } 2x - 2$$

$$J) \frac{1}{2}(-10x + 12) + 8x - 3$$

$$K) 3(2x + 1) - 2(4x - 4)$$

$$L) -4(-x + 2) + 5(2x - 3)$$

$$3 \begin{array}{|l} 6x + 3 \\ \hline 2x + 1 \end{array} - 2 \begin{array}{|l} -8x + 8 \\ \hline 4x - 4 \end{array}$$

$$\begin{array}{|l} 6x + 3 \\ \hline \end{array} - \begin{array}{|l} 8x \\ \hline \end{array} + \begin{array}{|l} 8 \\ \hline \end{array}$$

$$-2x + 11$$

Factoring Expressions

5) For the following expressions, find a greatest common factor of both terms and rewrite the expressions in factored form. You can use an area model and write the areas inside the box, then try to find the largest factor of both terms and write it on the side of the box.

$8x$	$+10$
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1) Find the largest number that goes into BOTH $+8x$ and $+10$
2 is the largest number

2) If you write a 2 off to the side, think about what you have to multiply 2 by to get an area of $8x$ for the 1st box and $+10$ for the 2nd box.

2

$8x$	$+10$
------	-------

 \longrightarrow 2

$8x$	$+10$
$4x$	$+5$

 \longrightarrow Answer: $2(4x + 5)$

A) $10x + 15$

\int

$10x$	$+15$
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 $2x + 3$

Factored Form:

$\int (2x + 3)$

B) $9x - 12$

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Factored Form:

()

C) $8x + 24$

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Factored Form:

()

D) $-10x + 25$

--	--

Factored Form:

()

E) $-6x - 12$

--	--

Factored Form:

()

F) $-4x - 14$

--	--

Factored Form:

()

G) $-2x + 10$

--	--

Factored Form:

()

H) $3x - 9$

--	--

Factored Form:

()

6) Evaluate each expression if $x = 2$, $y = -5$, and $z = 8$. **You must show all work.**

A) $6x + yz$

B) $y^2 - (3 + xz)$

C) $\frac{yz}{x}$

$6(2) + (-5)(8)$

$12 + (-40)$

$12 - 40$

-28

7) Refer to the table to the right.

A) If the arithmetic sequence will continue, what algebraic expression can be used to find the centimeters for any number of days?

Days	Centimeters
1 .2	2
3 .2	6
5 .2	10

Define Variable

Algebraic Expression

d = days

2d OR d . 2

B) How much will the cost be after 9 days?

8) Refer to the table to the right.

A) If the arithmetic sequence will continue, what algebraic expression can be used to find the distance traveled in miles for any number of hours?

Hours	Miles
1	55
2	110
3	165

Define Variable

Algebraic Expression

_____ = _____

B) How far will the object have traveled after 20 seconds?