

Warm Up

Date: Oct. 4

Quiz

Tuesday

Expand and Simplify

a) $(3n^4)(5m^3n^3 - 10m^2n^2)$

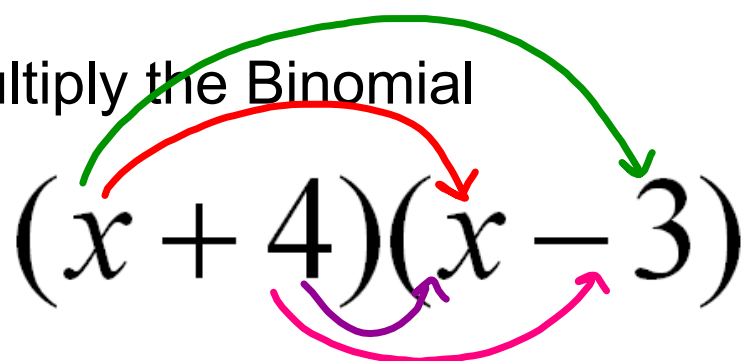
$$15m^3n^5 - 30m^2n^6$$

b) $(2x)(3x - 1) - 4(7x - 2)$

$$6x^2 - 2x - 28x + 8$$

$$6x^2 - 30x + 8$$

Multiply the Binomial


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

$$\begin{array}{cccc} x^2 & -3x & +4x & -12 \\ & \underbrace{\hspace{2cm}} & & \\ x^2 & +1x & -12 & \end{array}$$

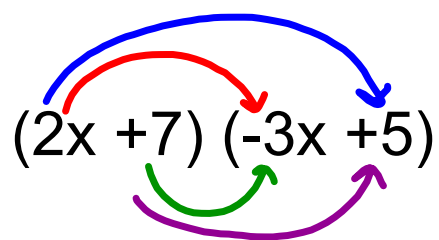
see next page
for box method

Multiply $23 \times 54 = 1242$

by box Method (grade 5 Math)

	20	3
50	1000	150
4	80	12

$$\begin{array}{r} 1000 \\ 150 \\ 80 \\ 12 \\ \hline 1242 \end{array}$$


$$(2x + 7)(-3x + 5)$$

$$= -6x^2 + 10x - 21x + 35$$

$$= -6x^2 - 11x + 35$$

$$(2x + 7)(-3x + 5)$$

	-3x	+5
2x	$-6x^2$	$10x$
+7	$-21x$	$+35$

$$-6x^2 + 10x - 21x + 35$$

$$-6x^2 - 11x + 35$$

Ultimate Question

$$(2x - 2)(3x^2 - 4x + 1)$$
$$6x^3 - 8x^2 + 2x - 6x^2 + 8x - 2$$
$$6x^3 - 14x^2 + 10x - 2$$

The image shows a handwritten expansion of the product of two polynomials. The first polynomial is $(2x - 2)$ and the second is $(3x^2 - 4x + 1)$. The expansion is shown as $6x^3 - 8x^2 + 2x - 6x^2 + 8x - 2$, where the terms are color-coded: $6x^3$ (red), $-8x^2$ (green), $+2x$ (blue), $-6x^2$ (purple), $+8x$ (green), and -2 (blue). Wavy lines are drawn under $-8x^2$, $-6x^2$, and $+8x$. The final simplified expression is $6x^3 - 14x^2 + 10x - 2$, with terms color-coded: $6x^3$ (red), $-14x^2$ (blue), $+10x$ (green), and -2 (blue). Colored arrows indicate the multiplication steps: a red arrow from $2x$ to $3x^2$, a green arrow from $2x$ to $-4x$, a blue arrow from $2x$ to 1 , a purple arrow from -2 to $3x^2$, a green arrow from -2 to $-4x$, and a blue arrow from -2 to 1 .

5) $(10x^5 + 3)(-2x^2 - 11x + 2)$

	$-2x^2$	$-11x$	$+2$
$10x^5$	•	•	•
$+3$	•	•	•

Expand and simplify

means repeat bracket twice

$$(x-3)^2$$
$$= (x-3)(x-3)$$
$$= x^2 - 3x - 3x + 9$$
$$= x^2 - 6x + 9$$

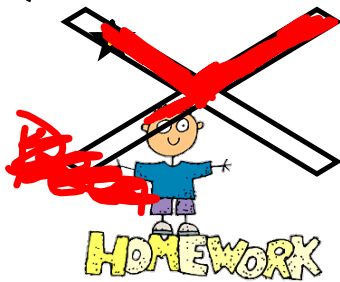
Expand and simplify

$$\begin{aligned}
 & (x + 2)^3 \\
 = & \underbrace{(x+2)(x+2)}_{\text{Do first}} (x+2) \\
 = & (x^2 + 2x + 2x + 4)(x+2) \\
 = & (x^2 + 4x + 4)(x+2) \\
 = & \frac{x^3}{\quad} + \frac{2x^2}{\quad} + \frac{4x^2}{\quad} + \frac{8x}{\quad} + \frac{4x}{\quad} + \frac{8}{\quad} \\
 = & x^3 + 6x^2 + 12x + 8
 \end{aligned}$$

Expand and simplify

$$\begin{array}{l}
 (x-1)^2 + (x+4)^2 \\
 (x-1)(x-1) \quad + \quad (x+4)(x+4) \\
 x^2 - 1x - 1x + 1 \quad + \quad (x^2 + 4x + 4x + 16) \\
 \underline{x^2} - \underline{2x} + \underline{1} \quad + \quad \underline{x^2} + \underline{8x} + \underline{16} \\
 2x^2 + 6x + 17
 \end{array}$$

Quiz Tues



- 1) Find the GCF of 2 numbers
- 2) Prime factorization (tree)
- 3) Factor the following (GCF out)
- 4) Simplify first then factor (Collect like terms then factor out GCF)
- 5) Expand AND simplify
- 6) Multiply 2 binomials (rainbow)

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Question ~~8ab~~, ~~9ab~~, ~~15af~~,
~~18ab~~, ~~21ab~~





Numbers, Relations & Functions 10

Name _____

Mutilpying Polynomials

Date _____

Find each product.

1) $5(6b + 3)$

2) $8(6r + 3)$

3) $2(8x + y)$

4) $5mn(3m + 2n)$

5) $7(x - 7y)$

6) $2mn(8m - 2n)$

7) $(4x - 2y)(6x + 6y)$

8) $(6x + 3y)(4x - 7y)$

9) $(2x + 5y)(7x - 8y)$

10) $(3x + 6y)(5x - 8y)$

11) $(5x - 4y)(5x^2 - 4xy + 6y^2)$

12) $(8x - 7y)(6x^2 + 8xy + 3y^2)$

13) $(6a^2 - 2a - 3)(8a + 2)$

14) $(2k^2 + 8k - 2)(7k + 4)$

15) $(7a^2 - 2ab + 2b^2)(a^2 - 2ab - 8b^2)$

16) $(x^2 - 4xy + 2y^2)(x^2 - 2xy - 7y^2)$

Answers to Mutilpying Polynomials

- | | | | |
|--|---|---------------------------------------|---------------------------|
| 1) $30b + 15$ | 2) $48r + 24$ | 3) $16x + 2y$ | 4) $15m^2n + 10mn^2$ |
| 5) $7x - 49y$ | 6) $16m^2n - 4mn^2$ | 7) $24x^2 + 12xy - 12y^2$ | 8) $24x^2 - 30xy - 21y^2$ |
| 9) $14x^2 + 19xy - 40y^2$ | 10) $15x^2 + 6xy - 48y^2$ | 11) $25x^3 - 40x^2y + 46xy^2 - 24y^3$ | |
| 12) $48x^3 + 22x^2y - 32xy^2 - 21y^3$ | 13) $48a^3 - 4a^2 - 28a - 6$ | | |
| 14) $14k^3 + 64k^2 + 18k - 8$ | 15) $7a^4 - 16a^3b - 50a^2b^2 + 12ab^3 - 16b^4$ | | |
| 16) $x^4 - 6x^3y + 3x^2y^2 + 24xy^3 - 14y^4$ | | | |