

## Warm Up

Oct. 13, 2016

Expand and Simplify

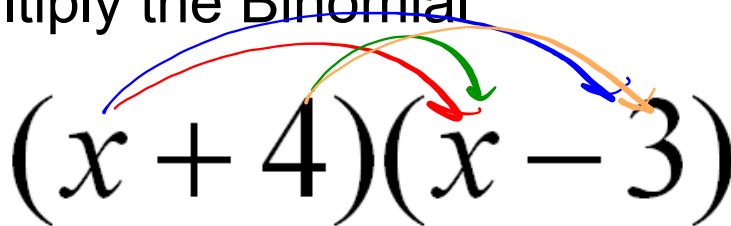
a)  $3n^4 (5m^3n - 10m^2n^2)$

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

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

$$6x^2 - 2x - 28x + 8$$
$$6x^2 - 30x + 8$$

Multiply the Binomial

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


$$x^2 - 3x + 4x - 12$$

$$x^2 + 1x - 12$$

see next page  
for box method

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

	x	+4
x	$x^2$	+ 4X
-3	-3x	-12

$$= x^2 + \underbrace{4x - 3x} + 1x - 12$$

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

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

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

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

$$\begin{array}{r} -6x^2 - 21x + 10x + 35 \\ -6x^2 - 11x + 35 \end{array}$$

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

**Ultimate Question**

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

	$3x^2$	$-4x$	$+1$
$2x$	$(3x^2)(2x)$ $= 6x^3$ ✓	$(2x)(-4x)$ $= -8x^2$ ✓	$(1)(2x)$ $= 2x$ ✓
$-2$	$-2(3x^2)$ $= -6x^2$ ✓	$(-2)(-4x)$ $+ 8x$ ✓	$-2(1)$ $-2$ ✓

$$= 6x^3 - 8x^2 - 6x^2 + 2x + 8x - 2$$

$$= 6x^3 - 14x^2 + 10x - 2$$

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

$-20x^7 - 110x^6 + 20x^5 - 6x^2 - 33x + 6$

	$-2x^2$	$-11x$	$+2$
$10x^5$	$-20x^7$	$-110x^6$	$+20x^5$
$+3$	$-6x^2$	$-33x$	$+6$

Expand and simplify

*repeat twice*

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

*combine like terms*

$$x^2 - 6x + 9$$



Expand and simplify

$$(x + 2)^3$$

$$\underbrace{(x+2)(x+2)}_{\text{do this first}} (x+2)$$

$$= x^2 + 2x + 2x + 4 \quad (x+2)$$

$$= (x^2 + 4x + 4) (x+2)$$

$$= x^3 + 2x^2 + 4x^2 + 8x + 4x + 8$$

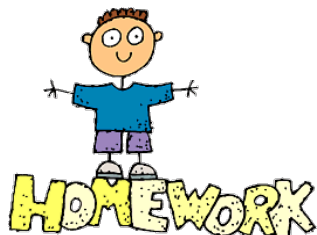
combine like terms

$$= x^3 + 6x^2 + 12x + 8$$

Expand and simplify

$$\begin{aligned}
 & (x-3)(x-1)(x-5) \\
 &= (x^2 - \underbrace{1x - 3x + 3}_{\text{combine}})(x-5) \\
 &= (x^2 - 4x + 3)(x-5) \\
 &= \underbrace{x^3 - 5x^2 - 4x^2 + 20x + 3x - 15} \\
 &= x^3 - 9x^2 + 23x - 15
 \end{aligned}$$

## Quiz TUESDAY Oct. 18



Page 186-187

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

$$\begin{aligned}
 15 f) & (2a+1)(4a-3) - (a-2)^2 \\
 = & (2a+1)(4a-3) - (a-2)(a-2) \\
 = & 8a^2 - 6a + 4a - 3 - (a^2 - 2a - 2a + 4) \\
 & 8a^2 - 2a - 3 - (a^2 - 4a + 4) \\
 = & 8a^2 - 2a - 3 - a^2 + 4a - 4 \\
 & \text{group like terms} \\
 = & 8a^2 - a^2 - 2a + 4a - 3 - 4 \\
 & 7a^2 + 2a - 7
 \end{aligned}$$