

1. Write the following products as polynomials in either  $x$  or  $t$ .

(a)  $5x(2x-4)$       \*(b)  $3t(t+7)$       \*(c)  $-4x(5x+1)$       (d)  $4(t^2-5t+2)$

2. Perhaps the most important type of polynomial multiplication is that of two binomials. Make sure you are **fluent** with this skill. Write each of the following **products** as an **equivalent polynomial** written in **standard form**.

(a)  $(x+5)(x-3)$       \*(b)  $(x-10)(x-4)$       \*(c)  $(x+3)(x+12)$       (d)  $(6x-5)(4x-3)$

3. Never forget that squaring a binomial also a process of repeated distribution. Write each of the following perfect squares as **trinomials** in **standard form**.

(a)  $(x+3)^2$       \*(b)  $(x-10)^2$       (c)  $(2t+3)^2$

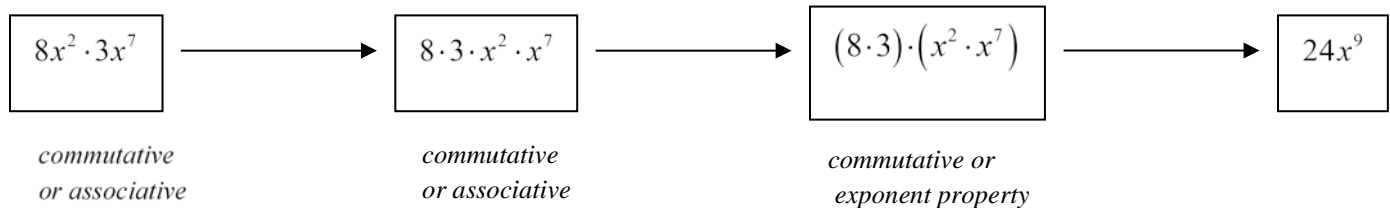
4. An interesting thing happens when you multiply two **conjugate binomials**. Conjugates have the property of having the same **terms** but differ by the operation between the two terms (in one case addition and in one case subtraction). Multiply each of the following **conjugate pairs** and state your answers in **standard form**.

(a)  $(x+3)(x-3)$       \*(b)  $(x-5)(x+5)$       \*(c)  $(10+x)(10-x)$       (d)  $(8-3t)(8+3t)$

5. Write each of the following products in standard polynomial form.

(a)  $(x+3)(x-2)(x-8)$       (b)  $(x+2)(x-2)(x+3)(x-3)$

\*R1. Circle the reason for each of the following manipulations used to simplify the product  $(8x^2)(3x^7)$ .



R2. Simplify:  $\frac{(x^2y^5)^3}{(xy^2)^4}$

R3. Increase 34 by 2%

\*R4. State the slope, y-intercept and x-intercept of the graph whose equation is  $2y - 3x = 8$

1. (a)  $10x^2 - 20x$   
(b)  $3t^2 + 21t$   
(c)  $-20x^2 - 4x$   
(d)  $4t^2 - 20t + 8$
2. (a)  $x^2 + 2x - 15$   
(b)  $x^2 - 14x + 40$   
(c)  $x^2 + 15x + 36$   
(d)  $24x^2 - 38x + 15$
3. (a)  $x^2 + 6x + 9$   
(b)  $x^2 - 20x + 100$   
(c)  $4t^2 + 12t + 9$
4. (a)  $x^2 - 9$   
(b)  $x^2 - 25$   
(c)  $-x^2 + 100$   
(d)  $-9t^2 + 64$
5. (a)  $x^3 - 7x^2 - 14x + 48$   
(b)  $x^4 - 13x^2 + 36$

R1. *Associative, commutative, exponent property*

R2.  $x^2y^7$

R3. 34.68

R4. slope =  $3/2$ , y-intercept = 4, and x-intercept =  $-\frac{8}{3}$