Complete the following expanding and simplifying practice problems...do we need any review???

Checkpoint...do you really understand??

Completely factor each of the following polynomials: ← if possible

$9+8b^2$ Will Not Factor!!

$-32n^9+32n^6+40n^5$

$=8n^5(-4n^4+4n+5)$

$-10y^7+6y^{10}-4y^{10}x-8y^8x$

$-2y^7(5-3y^3+2y^3x+4yx)$

$30y^4z^3x^5+50y^4z^5-10y^4z^3x$

$10y^4z^3(3x^5+5z^2-1x)$

$3a(2a+5b)-7b(2a+5b)$

$(2a+5b)(3a-7b)$

$6w^3(5a-3)^2+4w(5a-3)^6$

$2w(5a-3)^2$ $2w(5a-3)^2$

$=2w(5a-3)^2\left[3w^2+2(5a-3)^4\right]$

II. Factoring Trinomials:

Type 1: Polynomials of the form $1x^2 + bx + c$

- Often referred to as "Simple Trinomials"

Expand each of the following:

(a) $(w + 5)(w - 4)$ — factors

$w^2 + w - 20$

$w^2 - 4w + 5w - 20$

(b) $(x - 8)(x - 6)$

$x^2 - 14x + 48$

3 terms

Expanding →

← Factoring

Look at the numbers in the trinomial and the binomial.

$v^2 + 12v + 20 = (v + 2)(v + 10)$

12 is the sum of 2 and 10.

20 is the product of 2 and 10.

Factoring a Trinomial

To determine the factors of a trinomial of the form $x^2 + bx + c$, first determine two numbers whose sum is b and whose product is c. These numbers are the constant terms in two binomial factors, each of which has x as its first term.

$$x^2 + bx + c$$

$$? \times ? = c$$

$$? + ? = b$$

Let's try and factor each of the following trinomials:

$x^2 + 12x + 32$

$(x+4)(x+8)$

$4 + 8 = 12$

$4 \times 8 = 32$

-6×4

$a^2 + 10a - 24$

$(a+12)(a-2)$

$+12 \times -2 = -24$

$+12 + -2 = 10$

$w^2 - 13w - 30$

$(w-15)(w+2)$

$x^2 - 8x + 12$

$(x-2)(x-6)$

BONUS PROBLEM:

Expand and Simplify the following: [4]

$$(5w-2)(3w^2+6)-8(3w-4)^2-(2w^2+w-8)(w+7)^2$$