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Date: Answer Key

Multiplying Polynomials (Binomials and Trinomials)

Multiply the following polynomials.

1. $(x+y)(y-4) =$ $xy - 4x + y^2 - 4y$

2. $(2x-3)(x^2+x) =$ $2x^3 + 2x^2 - 3x^2 - 3x$
$2x^3 - x^2 - 3x$

3. $(y^3 - 2xy)(x+y) =$ $xy^3 + y^4 - 2x^2y - 2xy^2$

4. $(y-x)(x^2 - y + xy) =$ $x^2y - y^2 + xy^2 - x^3 + xy - x^2y$

5. $(2x)(9+4x)(x^2+3x) =$ $(18x + 8x^2)(x^2+3x)$
$= 18x^3 + 54x^2 + 8x^4 + 24x^3$
$= 8x^4 + 42x^3 + 54x^2$

6. $(x+y^2)(y-x^2+1) =$ $xy - x^3 + x + y^3 - x^2y^2 + y^2$

7. $(x^3-3)(1+x)(1-x) =$
$(x^3 + x^4 - 3 - 3x)(1-x)$
$x^3 + x^4 - 3x - 3 - x^4 - x^5 + 3x + 3x^2$
$-x^5 + x^3 + 3x^2 - 3$

8. $(4x+5)(3x+y+2) =$
$12x^2 + 4xy + 8x + 15x + 5y + 10$
$12x^2 + 23x + 4xy + 5y + 10$

9. $(y-3)(7x+4-y) =$
$7xy + 4y - y^2 - 21x - 12 + 3y$
$-21x + 7xy - y^2 + 7y - 12$

10. $(3x+4y)(-x+2y+1) =$
$-3x^2 + 0xy + 3x - 4xy + 8y^2 + 4$
$-3x^2 + 3x - 4xy + 8y^2 + 4$