

## Unit 8 - Polynomials and Factoring Review Guide

Perform the indicated operation on the following polynomials.

1. add  $6a - 3b + 6$ ;  $-6a + 2b - 10$

2. subtract  $x + xy - 2y$  from  $5x - xy + 5y$

3. add  $3xy - x^2y + xy^2$ ;  $-xy^2 - 5xy - 6x + 4x^2y$

4. subtract  $x^3y^2 - xy^3 + 5y^2 + 10$  from  $3x^3y^2 + 2xy^3 - x - 3y^2$

Simplify the following.

5.  $\{-4x - [5x - 2 - (3x + 3) - 6] + 10\} + 2$

6.  $[x + y - (5 - 3y + 5x)] - (2x - 3y + 1)$

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Find the product of the following polynomials.

7.  $4b(8bc)$

8.  $5m(12mn)$

9.  $2x(8x + y)$

10.  $4x(1 + 7y)$

11.  $2a(3a + 2b - 4)$

12.  $6bc(2a + b - 2c)$

Factor the following polynomials.

13.  $15x + 30$

14.  $8x + 16y - 24$

15.  $12a - 9b + 3$

16.  $60x - 20xy$

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17.  $36a^2 - 24ab - 72a$

18.  $30vuz - 60u^2z - 100uz$

Find the product of the following binomials.

19.  $(x + 5)(x + 2)$

20.  $(x + 3)(2x + 4)$

21.  $(x + y)(3x + 4y)$

22.  $(6y + 5)(y - 9)$

23.  $(x - y)(12x + y)$

24.  $(3 - 9y)(3 + 14y)$

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Find the product of the following Special product.

25.  $(x + 4)(x - 4)$

26.  $(x + 2)(x - 2)$

27.  $(2x + 3y)(2x - 3y)$

28.  $(y + 2)^2$

29.  $(6x - y)(6x + y)$

30.  $(3 + 7y)^2$

**Factor the Following Polynomials.**

31.  $x^2 + 10x + 21$

32.  $y^2 - 11y + 28$

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33.  $2x^2 + 26x + 72$

34.  $4y^2 + 12y - 40$

Find the Following Special product.

35.  $x^2 - 36$

36.  $y^2 - 49$

37.  $x^2 + 12x + 36$

38.  $9y^2 - 60y + 100$

Factor the following by grouping.

39.  $b^2 + 2b + 5b + 10$

40.  $y^2 - 3ny + 2ay - 6an$