Name: _____ Period: _____ Date: _____

Unit 8 – Polynomials and Factoring Test

Perform the indicated operation on the following polynomials.

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

2. subtract $2x + xy - 2y$ from $x - xy + 3y$

Find the product of the following polynomials.

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

4. $2x(1 + 5y)$ =

5. $5a(a + 2b - 3)$ =

6. $3bc(a + b - c)$ =

Factor the following polynomials.

7. $30x + 60$

8. $9x + 18y - 27$

Find the product of the following binomials.

9. $(x + 4)(x + 7)$

10. $(x + 4)(2x + 2)$

Name: _____ Period: _____ Date: _____

Unit 8 – Polynomials and Factoring Test

Find the product of the following Special product.

11. $(x + 7)(x - 7)$

12. $(2 + 3y)^2$

13. $(x + 3y)(x - 3y)$

14. $(y - 5)^2$

Factor the Following Polynomials.

15. $x^2 + 15x + 56$

16. $y^2 - 19y + 34$

Find the Following Special product.

17. $x^2 - 64$

18. $y^2 - 14y + 49$

Factor the following by grouping.

19. $d^2 + 2d + 3d + 6$

20. $x^2 - 2nx + 2ax - 4an$

Name: _____ Period: _____ Date: _____

Unit 8 – Polynomials and Factoring Test

ANSWER

Perform the indicated operation on the following polynomials.

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

Answer:

$$\begin{array}{r} 3a - 2b + 6 \\ +\ \underline{-3a + 2b - 10} \\ -4 \end{array}$$

2. subtract $2x + xy - 2y$ from $x - xy + 3y$

Answer:

$$\begin{array}{r} x - xy + 3y \\ (-)\quad \underline{2x + xy - 2y} \\ x - xy + 3y \\ (+)\ \underline{-2x - xy + 2y} \\ -x - 2xy + 5y \end{array}$$

Find the product of the following polynomials.

3. $3x(4x + y) =$ $12x^2 + 3xy$

4. $2x(1 + 5y) =$ $2x + 10xy$

5. $5a(a + 2b - 3) =$ $5a^2 + 10ab - 15a$

6. $3bc(a + b - c) =$ $3abc + 3b^2c - 3bc^2$
$3b^2c - 3bc^2 + 3abc$

Factor the following polynomials.

7. $30x + 60$
$(30\times1)x + (30\times2)$
GCF: 30
Answer: $30(x + 2)$

8. $9x + 18y - 27$
$(9\times1)x + (9\times2)y - (9\times3)$
GCF: 9
Answer: $9(x + 2y - 3)$

Find the product of the following binomials.

9. $(x + 4)(x + 7)$
Answer:
$x^2 + 7x + 4x + 10$
$x^2 + 11x + 10$

10. $(x + 4)(2x + 2)$
Answer:
$2x^2 + 2x + 8x + 8$
$2x^2 + 10x + 8$

Name: _____ Period: _____ Date: _____

Unit 8 – Polynomials and Factoring Test

Find the product of the following Special product.

11. $(x+7)(x-7)$
Answer:
$(x)^2-(7)^2$
x^2-49

12. $(2+3y)^2$
Answer:
$(2)^2+2(2)(3y)+(3y)^2$
$4+12y+9y^2$
$9y^2+12y+4$

13. $(x+3y)(x-3y)$
Answer:
$(x)^2-(3y)^2$
x^2-9y^2

14. $(y-5)^2$
Answer:
$(y)^2-2(y)(5)+(5)^2$
$y^2-10y+25$

Factor the Following Polynomials.

15. $x^2+15x+56$
Answer:
$x^2=(x)(x)$
$56=(7)(8)$
$15x=7x+8x$
$(x+7)(x+8)$

16. $y^2-19y+34$
Answer:
$y^2=(y)(y)$
$34=(-17)(-2)$
$-19y=-17y-2y$
$(y-17)(y-2)$

Find the Following Special product.

17. x^2-64
Answer:
$x^2=(x)(x)$
$64=(8)(8)$
$(x+8)(x-8)$

18. $y^2-14y+49$
Answer:
$y^2=(y)(y)$
$49=(7)(7)$
$-14y=-7y-7y$
$(y-7)^2$

Factor the following by grouping.

19. $d^2+2d+3d+6$
$=(d^2+2d)+(3d+6)$
$=d(d+2)+3(d+2)$
$=(d+3)(d+2)$

20. $x^2-2nx+2ax-4an$
$=(x^2-2nx)+(2ax-4an)$
$=x(x-2n)+2a(x-2n)$
$=(x+2a)(x-2n)$