Algebra 1 Name_____ ID: 1

9.1 to 9.7 Kuta Mid-Chapter Review

Date_____ Period____

Name each polynomial by degree and number of terms.

1) $-r^2 - 5r + 7$ QUADRATIC TRINOMIAL

2) $3x^0$ CONSTANT MONOMIAL

3) $-7n + 3$ LINEAR BINOMIAL

4) $-7b^2 + 7b$ QUADRATIC BINOMIAL

Simplify each sum. (remember to write polynomials in descending order) → H → L Exponent

5) $(-x + 8x^2 - 6x^4 + \cancel{6x^3} - 7) + (\cancel{-6x^3} + 4x^2 - 5x^4 - 5x + 2)$

$\boxed{-11x^4 + 12x^2 - 6x - 5}$

Differences. Rewrite as a sum. Then simplify.

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

$2 - x^3 + 4x^2 - 8x^2 - 5 - 8x^3 =$

$\boxed{-9x^3 - 4x^2 - 3}$

7) $(-8n - n^2 - 3) - (-8 + 3n^3 - 5n)$

$-8n - n^2 - 3 + 8 - 3n^3 + 5n =$

$\boxed{-3n^3 - n^2 - 3n + 5}$

Find each product onf binomials.

8) $(3x - 8)(5x + 5) =$

$15x^2 + 15x - 40x - 40 =$

$\boxed{15x^2 - 25x - 40}$

9) $(5x - 7)(5x + 7) =$

$25x^2 + \cancel{35x} - \cancel{35x} - 49 =$

$\boxed{25x^2 - 49}$

10) $(6x - 2)^2 = (6x - 2)(6x - 2) =$

$36x^2 - 12x - 12x + 4 =$

$\boxed{36x^2 - 24x + 4}$

11) $(4x + 3)^2 = (4x + 3)(4x + 3)$

$16x^2 + 12x + 12x + 9 =$

$\boxed{16x^2 + 24x + 9}$

Find the product.

12) $(5x - 2)(7x^2 - 2x - 1)$ $= 35x^3 - 10x^2 - 5x +$

$-14x^2 + 4x + 2 = \boxed{35x^3 - 24x^2 - x + 2}$

Factor completely. (Step: Is there a GCF?)

13) $-18n^6 - 54n^5 + 48n^2$

ALWAYS FACTOR (-1) FROM LEADING COEF!

$\boxed{-6N^2(3N^4 + 9N^3 - 8)}$

14) $12n^4 - 12n^2 - 4n$ $= \boxed{4N(3N^3 - 3N - 1)}$

15) $x^2 - 8x + 12$

1 12
2 6
3 4

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

16) $x^2 + 2x - 80$

1 80
2 40
4 20
5 16
8 10

$(x+10)(x-8)$

17) $x^2 - 12x + 32$

1 32
2 16
4 8

$(x-4)(x-8)$

18) $x^2 - 5x - 24$

1 24
2 12
3 8
4 6

$(x-8)(x+3)$

Perfect SQ
MINUS
Perfect SQ

19) $16x^2 - 9$

$(4x-3)(4x+3)$

20) $4n^2 - 25$

$(2N+5)(2N-5)$

TRINOMIAL
SQUARES

21) $9x^2 + 24x + 16$

$(3x+4)(3x+4)$

OR $(3x+4)^2$

22) $4x^2 - 20x + 25$

$(2x-5)(2x-5)$

OR $(2x-5)^2$

23) $7n^2 - 4n - 3$

1 7 1 3 $-7N$

$3N$

$(7N+3)(N-1)$

24) $3x^2 - 22x + 7$

1 3 1 7 $-21x$

$-1x$

$(3x-1)(x-7)$

25) $-5x^2 - 2x + 3$ (FACTOR -1)

$-1(5x^2 + 2x - 3)$

$5x$

$-3x$

$-1(5x-3)(x\ 1)$

26) $-x^2 + 3x + 18$

$-1(x^2 - 3x - 18)$

1 18
2 9
3 6

$-1(x+3)(x-6)$

FACTOR
GCF

27) $4x^2 - 28x - 32$

$4(x^2 - 7x - 8)$

18
24

$4(x-8)(x+1)$

28) $5x^2 + 15x - 90$

$5(x^2 + 3x - 18)$

1 18
2 9
3 6

$5(x+6)(x-3)$