Algebra 1

Name Key

Unit 8 Workday Review

Date _____ Period ____

Find the GCF of each.

1) $15x^3$ and $24x^7$

$3x^3$

2) $14x^4y^2$ and $24x^3y^5$

$2x^3y^2$

3) $9x^2$ and $49y^2$

1

4) $36xy$ and $45x^2y^2$

$9xy$

Factor the GCF out of each expression.

5) $15r^2 - 5$

$5(3r^2 - 1)$

6) $-6b + 9$

$-3(2b - 3)$

7) $2n^2 + 8n^5 - 4n^3$

$8n^5 - 4n^3 + 2n^2$

$2n^2(4n^3 - 2n + 1)$

8) $15x + 3x^2 + 12x^5$

$12x^5 + 3x^2 + 15x$

$3x(4x^4 + x + 5)$

Factor each completely.

9) $x^2 + 10x + 25$

$(x + 5)(x + 5)$

10) $b^2 - 4b - 12$

$(b - 6)(b + 2)$

11) $b^2 - 4b - 60$

$(b - 10)(b + 6)$

12) $2x^3 + 10x^2 - 48x$

$2x(x^2 + 5x - 24)$

$2x(x + 8)(x - 3)$

13) $2x^2 - 15x + 18$

$a \cdot c = 36$

1	36
2	18
-3	-12
4	9
6	6

$2x^2 - 3x - 12x + 18$

$x(2x - 3) - 6(2x - 3)$

$(x - 6)(2x - 3)$

14) $5x^2 - 4x - 9$

$a \cdot c = -45$

1	45
3	15
5	-9

$5x^2 + 5x - 9x - 9$

$5x(x + 1) - 9(x + 1)$

$(5x - 9)(x + 1)$

15) $5x^2 - 37x - 72$

$a \cdot c = 360$

1	360
2	180
3	120
4	90
5	72
6	60
8	45

$5x^2 - 45x + 8x - 72$

$5x(x-9) + 8(x-9)$

$(5x+8)(x-9)$

16) $9x^2 + 51x - 270$

$3(3x^2 + 17x - 90)$

$a \quad b \quad c$

$a \cdot c = -270$

1	270
2	135
3	90
5	54
6	45
9	30
10	27

$3x^2 - 10x + 27x - 90$

$x(3x-10) + 9(3x-10)$

$(x+9)(3x-10)$

17) $3x^4 - 48x^2$

$3x^2(x^2 - 16)$

$3x^2(x+4)(x-4)$

18) $9n^2 - 16$

$(3n+4)(3n-4)$

19) $16p^2 + 8p + 1$

$a \quad b \quad c$

$a \cdot c = 16$

1	16
2	8
4	4

$16p^2 + 4p + 4p + 1$

$4p(4p+1) + 1(4p+1)$

$(4p+1)(4p+1)$

20) $16m^2 - 8m + 1$

$a \quad b \quad c$

$a \cdot c = 16$

1	16
2	8
-4	-4

$(16m^2 - 4m)(-4m + 1)$

$4m(4m-1) - 1(4m-1)$

$(4m-1)(4m-1)$

21) The area of a rectangular field of corn can be expressed by the polynomial $5x^2 + 18x + 16$. Find the possible dimensions of the field. (Find polynomials that represent the length and width of the field).

$5x^2 + 18x + 16$

$a \quad b \quad c$

$a \cdot c = 80$

1	80
2	40
4	20
5	16
8	10

$(5x^2 + 8x) + (10x + 16)$

$x(5x+8) + 2(5x+8)$

$(x+2)(5x+8)$

22) The area of a rectangular sandbox can be represented by the polynomial $2x^2 + 15x + 25$. Find the polynomials to represent the dimensions of the field.

$2x^2 + 15x + 25$

$a \quad b \quad c$

$a \cdot c = 50$

1	50
2	25
5	10

$2x^2 + 5x + 10x + 25$

$x(2x+5) + 5(2x+5)$

$(x+5)(2x+5)$

23) The area of a rectangular plot of land can be represented by the polynomial $36x^3 - 8x^2$. Find the polynomials that represent the dimensions of the field.

$36x^3 + 8x^2$

$4x^2(9x+2)$

24) The area of a rectangular classroom can be represented by the polynomial $x^2 + x - 12$. Find the polynomials that represent the dimensions of the field.

$x^2 + x - 12$

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