Algebra 1

Name Monday key

Gcf Worksheet

Factor the common factor out of each expression.

1) $6n^7 - 15n^8$ $3n^7(2-5n)$

2) $2m^5 + 4m$ $2m(m^4+2)$

3) $-2r^3 - 2r^2$ $-2r^2(r+1)$

4) $-3n - 9n^3$ $-3n(1+3n^2)$

5) $-8x + 4$ $4(-2x+1)$

6) $-4b + 4$ $4(-b+1)$

7) $-8r^3 + 4r$ $4r(-2r^2+1)$

8) $2n^3 + n^2$ $n^2(2n+1)$

9) $-15x^2 + 10x$ $5x(-3x+2)$

10) $25a^2 - 20a$ $5a(5a-4)$

11) $4n^8 - 5n^5m - 5n^3$ $n^3(4n^5-5n^2m-5)$

12) $48 + 54xy + 6xy^2$ $6(8+9xy+xy^2)$

13) $30v^5u^3 + 36v^5 + 12v^6$ $6v^5(5u^3+6+2v)$

14) $-36x - 4x^2y^2 - 24xy^3$ $-4x(9+xy^2+6y^3)$

15) $2x^2y^2 + 16x^2 + 4$ $2(x^2y^2+8x^2+2)$

16) $-24uv^2 + 6u^2 + 48v$ $6(-4uv^2+u^2+8v)$

$8x^3y^4 + 7x^3y^3 + 4x^5$ $x^3(8y^4+7y^3+4x^2)$

18) $24a^2b + 18b - 24$ $6(4a^2b+3b-4)$

19) $-16xy^2 - 14x^2 + 12xy$ $2x(-8y^2-7x+6y)$

20) $7x^5y^3 - 21x^2y^4 + 14x^2y^3$ $7x^2y^3(x^3-3y+2)$

21) $-32b^4 - 32b^3a + 40ba$ $8b(-4b^3-4b^2a+5a)$

22) $-80mn - 72m + 72n$ $8(-10mn-9m+9n)$

23) $30yx^4 - 10y^3x + 15y^4$ $5y(6x^4-10y^2x+3y^3)$

24) $30x^6y^5 + 50x^5y + 20x^2y$ $10x^2y(3x^4y^4+5x^3+2)$

25) $-70m^{10}n - 21m^8n^2 + 63m^7n^2$ $7m^7n(-10m^3-3mn+9n)$

26) $-8x^3y^2 + 16x^4 + 6x^3y$ $2x^3(-4y^2+8x+3y)$

27) $18m^4n^3 - 27m^2n^2 - 45m^2n$ $9m^2n(2m^2n^2-3n-5)$

28) $-10x - 35x^3y^2 + 50y^2$ $5(-2x-7x^3y^2+10y^2)$

29) $4u^2 - 4u - 8v$ $4(u^2-u-2v)$

30) $-18 - 14y^5 + 18xy$ $2(-9-7y^5+9xy)$

Algebra 34

Name_____ ID

Factor by Grouping

Date_____ Period____

Factor each completely.

1) $5n^3 + 30n^2 + 2n + 12$

2) $25x^3 + 35x^2 + 15x + 21$

3) $42x^3 + 49x^2 - 12x - 14$

4) $3x^3 + 7x^2 + 18x + 42$

5) $3x^3 + 4x^2 + 15x + 20$

6) $24m^3 - 64m^2 + 60m - 160$

7) $2m^3 - 2m^2 - 5m + 5$

8) $200n^3 + 240n^2 + 160n + 192$

9) $40v^3 - 40v^2 - 56v + 56$

10) $6n^3 - 36n^2 - 4n + 24$

11) $384r^3 + 336r^2 - 64r - 56$

12) $56v^3 - 168v^2 - 24v + 72$

Solutions:

1) $5n^2(n+6) + 2(n+6)$

$(n+6)(5n^2+2)$

2) $5x^2(5x+7) + 3(5x+7)$

$(5x+7)(5x^2+3)$

3) $7x^2(6x+7) - 2(6x+7)$

$(6x+7)(7x^2-2)$ Correct ←

4) $3x^3+7x^2+18x+42$

$x^2(3x+7) + 6(3x+7)$

$(3x+7)(x^2+6)$

5) $3x^3+4x^2+15x+20$

$x^2(3x+4) + 5(3x+4)$

$(3x+4)(x^2+5)$

6) $4(6m^3+16m^2+15m+40)$

$4(2m^2(3m+8)+5(3m+8))$

$4(3m+8)(2m^2+5)$

7) $2m^2(m-1) - 5(m-1)$

$(m-1)(2m-5)$

8) $8(25n^3+30n^2+20n+24)$

$8(5n^2(5n+6)+4(5n+6))$

$8(5n+6)(5n^2+4)$

9) $40v^2(v-1) - 56(v-1)$ GCF first!

$(v-1)(40v^2-56)$

10) $2(3n^3-18n^2-2n+12)$

$2(3n^2(n-6)-2(n-6))$

$2(n-6)(3n^2-2)$

11) $8(48r^3+42r^2-8r-7)$

$8(8r^2(6r+7)-1(8r+7)) \Rightarrow 8(8r+7)(6r^2-1)$

12) $8(7v^3-21v^2-3v+9)$

$8(7v^2(v-3)-3(v-3))$

$8(v-3)(7v^2-3)$