Name_____ ID: 1

Factor by Grouping

Date_____ Period_____

Factor each completely.

1) $5x^3 + 7x^2 - 5x - 7$

2) $8x^3 - 12x^2 + 2x - 3$

3) $15n^3 - 20n^2 + 24n - 32$

4) $21v^3 + 9v^2 + 168v + 72$

5) $4n^3 + n^2 + 16n + 4$

6) $30n^3 + 35n^2 + 36n + 42$

7) $16k^3 + 20k^2 + 28k + 35$

8) $12v^3 + 18v^2 + 42v + 63$

9) $20xy - 15x - 12y + 9$

10) $40x^2y^3 + 50x^2y^2 - 64y^4x - 80y^3x$

11) $8mn + 14m + 12n + 21$

12) $136u^2v - 80u^3 - 48v^2u$

13) $32xy - 21 + 56x - 12y$

14) $8xy + 6x^2 + x^3 + 48y$

Factor by Grouping

Date_____ Period____

Factor each completely.

1) $5x^3 + 7x^2 - 5x - 7$

$(x - 1)(x + 1)(5x + 7)$

2) $8x^3 - 12x^2 + 2x - 3$

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

3) $15n^3 - 20n^2 + 24n - 32$

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

4) $21v^3 + 9v^2 + 168v + 72$

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

5) $4n^3 + n^2 + 16n + 4$

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

6) $30n^3 + 35n^2 + 36n + 42$

$(5n^2 + 6)(6n + 7)$

7) $16k^3 + 20k^2 + 28k + 35$

$(4k^2 + 7)(4k + 5)$

8) $12v^3 + 18v^2 + 42v + 63$

$3(2v^2 + 7)(2v + 3)$

9) $20xy - 15x - 12y + 9$

$(5x - 3)(4y - 3)$

10) $40x^2y^3 + 50x^2y^2 - 64y^4x - 80y^3x$

$2xy^2(5x - 8y)(4y + 5)$

11) $8mn + 14m + 12n + 21$

$(2m + 3)(4n + 7)$

12) $136u^2v - 80u^3 - 48v^2u$

$8u(2u - v)(6v - 5u)$

13) $32xy - 21 + 56x - 12y$

$(8x - 3)(4y + 7)$

14) $8xy + 6x^2 + x^3 + 48y$

$(x + 6)(8y + x^2)$