Kuta Software - Infinite Algebra 1 6.1 Name_____

Factoring By Grouping

Date_____ Period____

Factor each completely.

1) $8r^3 - 64r^2 + r - 8$

$(8r^2 + 1)(r - 8)$

2) $12p^3 - 21p^2 + 28p - 49$

$(3p^2 + 7)(4p - 7)$

3) $12x^3 + 2x^2 - 30x - 5$

$(2x^2 - 5)(6x + 1)$

4) $6v^3 - 16v^2 + 21v - 56$

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

5) $63n^3 + 54n^2 - 105n - 90$

$3(3n^2 - 5)(7n + 6)$

6) $21k^3 - 84k^2 + 15k - 60$

$3(7k^2 + 5)(k - 4)$

7) $25v^3 + 5v^2 + 30v + 6$

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

8) $105n^3 + 175n^2 - 75n - 125$

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

9) $96n^3 - 84n^2 + 112n - 98$

$2(6n^2 + 7)(8n - 7)$

10) $28v^3 + 16v^2 - 21v - 12$

$(4v^2 - 3)(7v + 4)$

11) $4v^3 - 12v^2 - 5v + 15$

$(4v^2 - 5)(v - 3)$

12) $49x^3 - 35x^2 + 56x - 40$

$(7x^2 + 8)(7x - 5)$

13) $24p^3 + 15p^2 - 56p - 35$

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

14) $24r^3 - 64r^2 - 21r + 56$

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

15) $56xw + 49xk^2 - 24yw - 21yk^2$

$(7x - 3y)(8w + 7k^2)$

16) $42mc + 36md - 7n^2c - 6n^2d$

$(6m - n^2)(7c + 6d)$

17) $12x^2u + 3x^2v + 28yu + 7yv$

$(3x^2 + 7y)(4u + v)$

18) $40ac^2 + 25ak^2 + 32bc^2 + 20bk^2$

$(5a + 4b)(8c^2 + 5k^2)$

19) $12bc - 4bd - 15xc + 5xd$

$(4b - 5x)(3c - d)$

20) $16mn - 4m^2 + 28n - 7m$

$(4m + 7)(4n - m)$

21) $56xy - 35x + 16ry - 10r$

$(7x + 2r)(8y - 5)$

22) $21xy + 15x + 35ry + 25r$

$(3x + 5r)(7y + 5)$

23) $5a^2z - 4a^2c + 15xz - 12xc$

$(a^2 + 3x)(5z - 4c)$

24) $4xy + 6 - x - 24y$

$(x - 6)(4y - 1)$

25) $21xy - 12b^2 + 14xb - 18by$

$(7x - 6b)(3y + 2b)$

26) $9mz - 4nc + 3mc - 12nz$

$(3m - 4n)(3z + c)$

27) $28xy + 25 + 35x + 20y$

$(7x + 5)(4y + 5)$

28) $30uv + 30u + 36u^2 + 25v$

$(6u + 5)(5v + 6u)$