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

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

Name_____

Factoring Trinomials (a = 1)

Date_____ Period____

Factor each completely.

1) $b^2 + 8b + 7$

$(b + 7)(b + 1)$

2) $n^2 - 11n + 10$

$(n - 10)(n - 1)$

3) $m^2 + m - 90$

$(m - 9)(m + 10)$

4) $n^2 + 4n - 12$

$(n - 2)(n + 6)$

5) $n^2 - 10n + 9$

$(n - 1)(n - 9)$

6) $b^2 + 16b + 64$

$(b + 8)^2$

7) $m^2 + 2m - 24$

$(m + 6)(m - 4)$

8) $x^2 - 4x + 24$

Not factorable

9) $k^2 - 13k + 40$

$(k - 5)(k - 8)$

10) $a^2 + 11a + 18$

$(a + 2)(a + 9)$

11) $n^2 - n - 56$

$(n + 7)(n - 8)$

12) $n^2 - 5n + 6$

$(n - 2)(n - 3)$

Name_____

Factoring Trinomials (a > 1)

Date_____ Period_____

Factor each completely.

1) $3p^2 - 2p - 5$

$(3p - 5)(p + 1)$

2) $2n^2 + 3n - 9$

$(2n - 3)(n + 3)$

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

$(3n - 2)(n - 2)$

4) $5n^2 + 19n + 12$

$(5n + 4)(n + 3)$

5) $2v^2 + 11v + 5$

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

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

$(2n + 1)(n + 2)$

7) $7a^2 + 53a + 28$

$(7a + 4)(a + 7)$

8) $9k^2 + 66k + 21$

$3(3k + 1)(k + 7)$