

8.5 C Factoring by Grouping

Date _____ Period _____

Factor each completely.

1) $14n^3 - 35n^2 + 2n - 5$

$(7n^2 + 1)(2n - 5)$

2) $15x^3 + 40x^2 + 3x + 8$

$(5x^2 + 1)(3x + 8)$

3) $25m^3 + 35m^2 + 5m + 7$

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

4) $3x^3 - x^2 + 21x - 7$

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

5) $48p^3 + 56p^2 + 6p + 7$

$(8p^2 + 1)(6p + 7)$

6) $21k^3 + 9k^2 + 28k + 12$

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

7) $35n^3 + 40n^2 + 7n + 8$

$(5n^2 + 1)(7n + 8)$

8) $42b^3 + 35b^2 + 12b + 10$

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

$$9) 24k^3 + 15k^2 + 56k + 35$$
$$(3k^2 + 7)(8k + 5)$$

$$10) 35n^3 + 30n^2 + 42n + 36$$
$$(5n^2 + 6)(7n + 6)$$

$$11) 2x^3 - 7x^2 + 4x - 14$$
$$(x^2 + 2)(2x - 7)$$

$$12) 24n^3 - 15n^2 + 56n - 35$$
$$(3n^2 + 7)(8n - 5)$$

$$13) 35v^3 + 30v^2 + 28v + 24$$
$$(5v^2 + 4)(7v + 6)$$

$$14) 21x^3 + 9x^2 + 49x + 21$$
$$(3x^2 + 7)(7x + 3)$$

$$15) 4n^3 + 10n^2 - 6n - 15$$
$$(2n^2 - 3)(2n + 5)$$

$$16) 18m^3 + 6m^2 - 3m - 1$$
$$(6m^2 - 1)(3m + 1)$$

$$17) 48r^3 - 56r^2 - 30r + 35$$
$$(8r^2 - 5)(6r - 7)$$

$$18) 7a^3 + 14a^2 - 6a - 12$$
$$(7a^2 - 6)(a + 2)$$