

Factoring By Grouping

Factor each completely.

$$1) (15x^3 - 20x^2) + (18x - 24)$$

$$5x^2(3x - 4) + 6(3x - 4)$$

$$(5x^2 + 6)(3x - 4)$$

$$2) (35m^3 - 10m^2) + (56m - 16)$$

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

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

$$3) (35n^3 - 30n^2) + (28n - 24)$$

$$5n^2(7n - 6) + 4(7n - 6)$$

$$(5n^2 + 4)(7n - 6)$$

$$4) (40r^3 + 64r^2) + (25r + 40)$$

$$8r^2(5r + 8) + 5(5r + 8)$$

$$(8r^2 + 5)(5r + 8)$$

$$5) (25k^3 + 20k^2) + (35k + 28)$$

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

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

$$6) (7r^3 - 42r^2) + (2r - 12)$$

$$7r^2(r - 6) + 2(r - 6)$$

$$(7r^2 + 2)(r - 6)$$

$$7) (10r^3 + 5r^2) + (4r + 2)$$

$$5r^2(2r + 1) + 2(2r + 1)$$

$$(5r^2 + 2)(2r + 1)$$