

## Factoring By Grouping

**- ANSWER -**

Factor each completely.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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