



## Factor Polynomials (Order 3) - By Grouping to Common Factors,

### Coefficient 1

**1** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$n^3 + 4n^2 + 5n + 20$$

A  $n^2(n - 4) - 30(n - 4)$

B  $n^2(n + 4) + 5(n + 4)$

**2** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$y^3 - 9y^2 + 2y - 18$$

A  $y^2(y - 9) - 16(y - 9)$

B  $y^2(y - 9) + 2(y - 9)$

**3** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$q^3 + 3q^2 + 6q + 18$$

A  $q^2(q + 3) - 42(q + 3)$

B  $q^2(q + 3) + 6(q + 3)$

**4** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$t^3 + 9t^2 + 2t + 18$$

A  $t^2(t + 9) + 2(t + 9)$

B  $t^2(t - 9) - 14(t - 9)$

**5** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$q^3 + 3q^2 + 8q + 24$$

A  $q^2(q + 3) + 8(q + 3)$

B  $q^2(q - 3) + 16(q - 3)$

**6** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$w^3 - 4w^2 - 9w + 36$$

A  $w^2(w - 4) - 9(w - 4)$

B  $w^2(w + 4) - 9(w + 4)$

**7** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$r^3 - 2r^2 + 7r - 14$$

A  $r^2(r - 2) - 56(r - 2)$

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

**8** Group the terms in pairs and remove a common factor to begin factoring by grouping

$$t^3 - 8t^2 + 2t - 16$$

A  $t^2(t - 8) + 2(t - 8)$

B  $t^2(t - 44) + 12(t - 44)$