

# Factoring

## 1 – Factoring by Grouping

Factor by grouping. Show all work to receive full credit.

#1)  $12x^3 - 9x^2 + 4x - 3$

#6)  $5x^3 - 10x^2 + 3x - 6$

#2)  $2x^3 + 5x^2 + 6x + 15$

#7)  $35xy - 5x - 56y + 8$

#3)  $3x^3 - 4x^2 + 9x - 12$

#8)  $224az + 56ac - 84yz - 21yc$

#4)  $12x^3 + 4x^2 + 3x + 1$

#9)  $mz - 5mh^2 - 5nz + 25nh^2$

#5)  $x^3 - x^2 + 2x - 2$

#10)  $12xy - 28x - 15y + 35$

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#11)  $40xy + 30x - 100y - 75$

#16)  $105ab - 90a - 21b + 18$

#12)  $75a^2c - 45a^2d - 30bc + 18bd$

#17)  $16x^2c + 8xyd - 16x^2y - 8xyc$

#13)  $192x^2y + 72x^3 - 24rxy - 9rx^2$

#18)  $150m^2nz + 20mn^2c - 120m^2nc - 25mn^2z$

#14)  $90au - 36av - 150yu + 60yv$

#19)  $105xuv + 60xv - 70xu - 90xv^2$

#15)  $140ab - 60a^2 + 168b - 72a$

#20)  $112xy - 16x + 128x^2 - 14y$