

## Factoring By Grouping HOMEWORK- Day 2

Factor each completely

1.  $(32az - 8ac) - 3yc + 12yz$   
 $8a(4z - c) + 3y(-c + 4z)$   
 $(8a + 3y)(4z - c)$

2.  $mz - 5mh^2 + 25nh^2 - 5nz$   
 $m(z - 5h^2) - 5n(-5h^2 + z)$   
 $(m - 5n)(z - 5h^2)$

3.  $12xy - 28x + 35 - 15y$   
 $4x(3y - 7) - 5(-7 + 3y)$   
 $(4x - 5)(3y - 7)$

4.  $40xy + 30x - 100y - 75$   
 $10x(4y + 3) - 25(4y + 3)$   
 $(10x - 25)(4y + 3)$   
 $5(2x - 5)(4y + 3)$

Still factorable missed GCF to start!

5.  $75a^2c - 45a^2d - 18bd + 30bc$   
 $3[25a^2c - 15a^2d - 6bd + 10bc]$   
 $3[5a^2(5c - 3d) + 2b(-3d + 5c)]$   
 $3(5a^2 + 2b)(5c - 3d)$

6.  $192x^2y + 72x^3 - 24rxy - 9rx^2$   
 $3x[64xy + 24x^2 - 8ry - 3rx]$   
 $3x[8x(8y + 3x) - r(8y + 3x)]$   
 $3x(8x - r)(8y + 3x)$

7.  $90au - 36av - 150yu + 60yv$   
 $3[30au - 12av - 50yu + 20yv]$   
 $3[6a(5u - 2v) - 10y(5u - 2v)]$   
 $3(6a - 10y)(5u - 2v)$   
 $6(3a - 5y)(5u - 2v)$

8.  $105ab - 90a - 21b + 18$   
 $3(35ab - 30a - 7b + 6)$   
 $3[5a(7b - 6) - 1(7b - 6)]$   
 $3(5a - 1)(7b - 6)$



Factor each completely.

9.  $16x^2c + 8xyd - 16x^2d - 8xyc$

$$8x [2xc + yd - 2xd - yc]$$

$\curvearrowright$  nothing to factor

$$8x [2xc - 2xd + yd - yc]$$

$$8x [2x(c-d) - (-d+c)]$$

$$\boxed{8x(2x-y)(c-d)}$$

10.  $150m^m n^2 z + 20m^m n^2 c - 120m^m n^2 c - 25m^m n^2 z$

$$5mn [30mz + 4nc - 24mc - 5nz]$$

$$5mn [2(15mz + 2nc) - 1(24mc + 5nz)]$$

\*switch middle!

$$5mn [30mz - 24mc + 4nc - 5nz]$$

$$5mn [6m(5z - 4c) - n(-4c + 5z)]$$

$$\boxed{5mn(6m-n)(5z-4c)}$$

11.  $105xuv + 60xv - 70xu - 90xv^2$

$$5x [21uv + 12v - 14u - 18v^2]$$

$$5x [3v(7u+4) - 2(7u+9v^2)]$$

\*switch middle

$$5x [21uv - 14u + 12v - 18v^2]$$

$$5x [7u(3v-2) - 6v(2+3v)]$$

$$\boxed{5x(7u-6v)(3v-2)}$$

12.  $112xy - 16x + 128x^2 - 14y$

$$2 [56xy - 8x + 64x^2 - 7y]$$

$\curvearrowright$  nothing to factor

$$2 [56xy + 64x^2 - 8x - 7y]$$

$$2 [8x(7y+8x) - 1(8x+7y)]$$

$$\boxed{2(8x-1)(7y+8x)}$$