

MAT 099  $\rightarrow$  5.5 #s 1, 4, 7, 10, 13, 16, 19, 25, 28,  
31, 39, 41, 45, 48, 53, 56, 66

#s 13, 28, 31, 66 - Manage signs carefully

#s 53, 56 - Don't "lose" the "1"

#s 1-8 Find GCF of the monomials

①  $a^8, a^5, a^3$

$GCF = a^3$

④  $xy^2z^3, x^2y^2z^2, x^2y^3$

$GCF = xy^2$

⑦  $10x^3yz^3, 20x^2z^5, 45xz^3$   $GCF = 5xz^3$

10      20      45  
2·5    2·2·5    3·3·5  
5 is GCF

#s 9-24 Factor out the GCF

⑩  $21x + 14 = 7(3x + 2)$

GCF = 7

⑬  $6x^5 - 8x^4 + 2x^3 = 2x^3(3x^2 - 4x + 1)$

GCF =  $2x^3$

$\frac{6x^5}{2x^3}$      $\frac{-8x^4}{2x^3}$      $\frac{2x^3}{2x^3}$

⑯  $12a^3b - 6ab + 18ab^2 - 18a^2b =$

12      6      18  
2·2·3    2·3    2·3·3

GCF =  $2 \cdot 3 = 6$

$= 6ab(2a^2 - 1 + 3b - 3a)$

MAT 099 § 5.5 #5 19, 25, 28, 31, 39, 41, 45, 48, 53, 56, 66

$$(19) \quad 2x(z+7) + (z+7) = \boxed{(z+7)(2x+1)}$$

#s 25-32 FACTOR BY GROUPING

$$\frac{2x(z+7)}{(z+7)} \quad \frac{z+7}{z+7}$$

$$(25) \quad ab+3a+2b+6 = a(b+3) + 2(b+3) \\ = \boxed{(b+3)(a+2)}$$

$$(28) \quad bc+8b-3c-24 = b(c+8) + 3(-c-8) \\ = b(c+8) - 3(c+8) = \boxed{(c+8)(b-3)}$$

$$(31) \quad 12xy-8x-3y+2 = 4x(3y-2) + (-3y+2) \\ = 4x(3y-2) - (3y-2) = \boxed{(3y-2)(4x-1)}$$

#s 33-66 FACTOR EACH POLYNOMIAL  $\frac{4x(3y-2)}{3y-2} \quad \frac{-(3y-2)}{(3y-2)}$

$$(39) \quad -20x^2y + 16xy^3 = \boxed{-4xy(5x-4y^2)}$$

$$(41) \quad 10a^2b^3 + 5ab^2 - 15ab^3 = \boxed{5ab^2(2ab+1-3b)}$$

$$(45) \quad 4x(y-2) - 3(y-2) = \boxed{(y-2)(4x-3)}$$

$$(48) \quad 15xy + 20x + 6y + 8 = 5x(3y+4) + 2(3y+4) \\ = \boxed{(3y+4)(5x+2)}$$

MAT 099 5.5 #s 53, 56, 66

$$\textcircled{53} \quad 12xy + 18x + 2y + 3$$

$$= 6x(2y + 3) + (2y + 3)$$

$$= \boxed{(2y + 3)(6x + 1)}$$

Easy to miss

$$\frac{6x(2y+3)}{(2y+3)} \quad \frac{2y+3}{2y+3}$$

$$\textcircled{56} \quad 3a(b-4) - (b-4)$$

$$= (b-4)(3a-1)$$

$$\textcircled{66} \quad x^3 - 2x^2 - 3x + 6$$

$$= x^2(x-2) - 3(x-2)$$

$$= \boxed{(x-2)(x^2-3)}$$