

## Factoring

12

16

1, 2, 3, 4, 6, 12

1, 2, 4, 8, 16

GCF

$$5x^2 + 10x + 15$$

$$5(x^2 + 2x + 3)$$

$$30. \quad 2p^4r - 8p^3r^2 + 16p^2r^3$$

$$2p^2r(p^2 - 4pr + 8r^2)$$

p450

## Multiplication of like bases

$$x^2 \cdot x^4$$

Add exponents

$$x^{2+4}$$

$$x^6$$

$$x^2 \cdot x^0$$

$$x^{2+0}$$

$$x^2$$

$$x^{3y} \cdot x^4$$

$$x^{3y+4}$$

$$x^n \cdot x^3$$

$$x^{n+3}$$

$$40. \quad x^{n+3} + x^n$$

$$x^n(x^3 + 1)$$

 $x^n \cdot x^3$ 

$$41. \quad 9w^{2n} + 21w^{2n+1}$$

$$3w^{2n}(3 + 7w^1)$$

$$9w^{2n} + 21w^{2n+1}$$

$$42. \quad x^{3n+21} + 2x^{2n+14}$$

$$x^{2n+14}(x^{n+7} + 2)$$

# Factoring by Grouping

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

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

$$4m(n+1) + 3m(n+1)$$

$$(n+1)(4m+3m)$$

$$(n+1)(7m)$$

like  
terms

$$a(x+y) + b(x+y)$$

$$(x+y)(a+b)$$

$$\underline{8(m+4)} - \underline{n(m+4)}$$

$$(m+4)(8-n)$$

$$51. \quad x-2$$

$$2-x$$

$$\begin{array}{l} +a+4 \\ -1(a+4) \\ -a-4 \end{array} \quad \begin{array}{l} \text{factor } b-7 \\ \text{out} \\ -1(-b+7) \end{array}$$

$$\begin{array}{l} r-9 \\ -1(-r+9) \end{array}$$

$$51. \quad \underline{2(x-2)} + x \underline{(2-x)}$$

$$\begin{array}{l} \text{factor} \\ \text{but} \\ -1 \text{ from} \\ \text{quantities} \end{array} \quad \underline{2(x-2)} + x \underline{(-1)(-2+x)}$$

$$\underline{2(x-2)} + \underline{-x(x-2)}$$

$$(x-2)(2-x)$$

$$p 451 \quad 44-54 E$$