

# CHAPTER 5 REVIEW

## Section 1: MULTIPLYING POLYNOMIALS

- a)  $(x - 2)(x + 3)$
- b)  $(y + 6)(y + 2)$
- c)  $(x + 4)(x - 5)$
- d)  $(x - 8)(x - 6)$
- e)  $(x - 2y)(x + 2y)$
- f)  $(2x + 1)(x - 3)$
- g)  $(2x - 7y)(2x - 5y)$
- h)  $(3 - 2s)(2 - 3s)$
- i)  $2(x - 7)(2x + 1)$
- j)  $(x + 3)(x + 6) - 2(x + 1)$
- k)  $-(m + 7)(m - 1) + 4(2m + 1)(3m - 4)$
- l)  $-6(2x + 1)(6x + 1) + 3(4x - 3)^2$

## Section 2: COMMON FACTORING

### Monomial:

- a)  $x^2 + 3x$
- b)  $2x^2 + 10x$
- c)  $3x^2 + 6x$
- d)  $3x + 6y$
- e)  $17ac - 34ad$
- f)  $16x^2y^2 - 24xy$
- g)  $27x^3y^3 + 18x^2y^2 + 9xy$

### Binomial:

- h)  $2x(x + 7) + 3(x + 7)$
- i)  $a(b - 7) + 2(b - 7)$
- j)  $4s(r + u) - 3(r + u)$
- k)  $y(x + s) + z(x + s)$

### Binomial by Grouping:

- l)  $ax + ay + 3x + 3y$
- m)  $4x^2 + 6xy + 12y + 8x$
- n)  $9x^2 - 6x + 6x - 4$
- o)  $16x^2 - 12xy - 12xy + 9y^2$

## Section 3: FACTORING $ax^2 + bx + c$

Where 'a' is 1 or can be factored out:

- a)  $x^2 + 5x + 6$
- b)  $x^2 + 12x + 27$
- c)  $x^2 - 3x - 18$
- d)  $d^2 - 12d + 35$
- e)  $c^2 - 11c + 30$
- f)  $x^2 - x - 72$
- g)  $3x^2 - 12x - 36$
- h)  $-2x^2 + 2x + 4$
- i)  $6x^2 - 42x + 72$

Where 'a' is not 1 and can't be factored out:

- j)  $2x^2 + 7x + 3$
- k)  $6x^2 + 11x + 4$
- l)  $6x^2 + 10x - 4$
- m)  $2d^2 - 11d - 6$
- n)  $6x^2 - 29x + 35$
- o)  $4r^2 - 20r + 25$
- p)  $-6x^2 - 34x + 12$
- q)  $6x^2 - 5xy - 4y^2$

## Section 4: SPECIAL PRODUCTS

### Multiply Special Products:

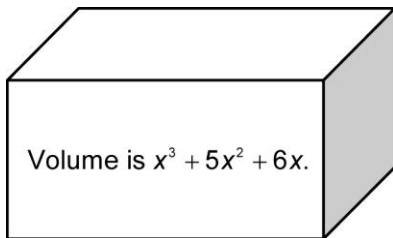
- a)  $(x + 3)^2$
- b)  $(x + 2)^2$
- c)  $(3x + 2y)^2$
- d)  $(x - 6)^2$
- e)  $(v - 2)(v + 2)$
- f)  $(x + 6)(x - 6)$
- g)  $(3x + y)(3x - y)$

### Factor Special Products:

- a)  $x^2 - 25$
- b)  $y^2 - 49$
- c)  $36x^2 - y^2$
- d)  $x^2 + 14x + 49$
- e)  $x^2 - 6x + 9$
- f)  $4x^2 - 12xy + 9y^2$

## Section 5: APPLICATION

- a) Determine expressions to represent the dimensions of this rectangular prism. (Hint: can anything be common factored out???)



- b) A square has side length  $4a$ . One dimension is increased by 6 and the other is decreased by 6.
- i) Write an algebraic expression to represent the area of the resulting rectangle.
  
  
  
  
  
  
  
  
  
  
  - ii) Expand this expression and simplify.

## ANSWERS:

### Section 1: MULTIPLYING POLYNOMIALS

- a)  $x^2+x-6$
- b)  $y^2+8y+12$
- c)  $x^2-x-20$
- d)  $x^2-14x+48$
- e)  $x^2-4y^2$
- f)  $2x^2-5x-3$
- g)  $4x^2 - 24xy + 35y^2$
- h)  $6s^2 - 13s + 6$
- i)  $4x^2 - 26x - 14$
- j)  $x^2 + 7x + 16$
- k)  $23m^2 - 26m - 9$
- l)  $-24x^2 - 120x + 21$

### Section 2: COMMON FACTORING

#### **Monomial:**

- a)  $x(x+3)$
- b)  $2x(x+5)$
- c)  $3x(x+2)$
- d)  $3(x+2y)$
- e)  $17a(c-2d)$
- f)  $8xy(2xy-3)$
- g)  $9xy(3x^2y^2+2xy+1)$

- h)  $(x+7)(2x+3)$
- i)  $(b-7)(a+2)$
- j)  $(r+u)(4s-3)$
- k)  $(x+s)(y+z)$

#### **Binomial by Grouping:**

- l)  $(a+3)(x+y)$
- m)  $2(x+2)(2x+3y)$
- n)  $(3x+2)(3x-2)$
- o)  $(4x-3y)^2$

#### **Binomial:**

### Section 3: FACTORING $ax^2+bx+c$

#### **Where 'a' is 1 or can be factored out:**

- a)  $(x+3)(x+2)$
- b)  $(x+3)(x+9)$
- c)  $(x-6)(x+3)$
- d)  $(d-5)(d-7)$
- e)  $(c-5)(c-6)$
- f)  $(x-9)(x+8)$
- g)  $3(x-6)(x+2)$
- h)  $-2(x-2)(x+1)$
- i)  $6(x-4)(x-3)$

#### **Where 'a' is not 1 and can't be factored out:**

- j)  $(x+3)(2x+1)$
- k)  $(2x+1)(3x+4)$
- l)  $2(x+2)(3x-1)$
- m)  $(d-6)(2d+1)$
- n)  $(2x-5)(3x-7)$
- o)  $(2r-5)(2r-5)$
- p)  $-2(3x-1)(x+6)$
- q)  $(3x-4y)(2x+y)$

### Section 4: SPECIAL PRODUCTS

#### **Multiply Special Products:**

- a)  $x^2+6x+9$
- b)  $x^2+4x+4$
- c)  $9x^2+12xy+4y^2$
- d)  $x^2-12x+36$
- e)  $v^2-4$
- f)  $x^2-36$
- g)  $9x^2-y^2$

#### **Factor Special Products:**

- a)  $(x-5)(x+5)$
- b)  $(y-7)(y+7)$
- c)  $(6x-y)(6x+y)$
- d)  $(x+7)^2$
- e)  $(x-3)^2$
- f)  $(2x-3y)^2$

### Section 5: APPLICATION

- a)  $x(x+3)(x+2)$
- b) i)  $(4a+6)(4a-6)$  ii)  $16a^2-36$