

**Multiplying Monomials with Monomials and Binomials**

1

What is the product of the following expressions below?

a)  $7x^7(4x^2)$

b)  $7x^3(4x^8 + x)$

c)  $3x^7(6x^6 + x)$

**Multiplying Monomials with other Polynomials**

2

*Distribute first, then combine "like terms" (same variable, same exponent)*

What is the product of each of the following expressions below?

a)  $-7x(4x^2 + 7x - 5)$

b)  $-2x^3(6x^6 + 7x^4 + x^2)$

c)  $4x(5x^3 + 2x^2 - 5x) - 2x^2(7x^2 - x + 8)$

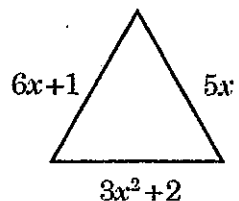
d)  $3x(4x^2 + x + 5) + 5x^2(2x^3 + 6x - 1)$

**Finding Perimeter of Figures**

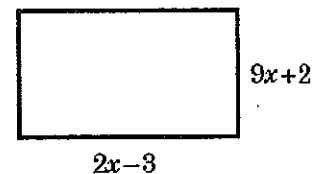
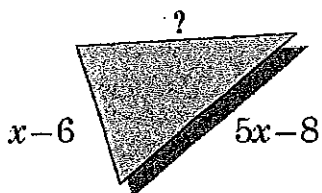
What is the perimeter of the following figures?

3

a)



b)

c) If the perimeter of a triangle is  $8x - 11$ , what is the length of the missing side of the triangle?

### Multiplying Binomials – FOIL Method

4 What is the product of the expression  $(x - 3)(x + 8)$ ?

- F \_\_\_\_\_  
– Multiply the first two terms together
- O \_\_\_\_\_  
– Multiply the two outside terms together
- I \_\_\_\_\_  
– Multiply the two inside terms together
- L \_\_\_\_\_  
– Multiply the last two terms together

6 What is the product of the following expressions?

a)  $(x + 2)(x + 7)$

b)  $(3x - 2)(4x + 6)$

c)  $(7x^7 + 5x)(4x^2 + 2)$

7 What is the product of the following expressions?

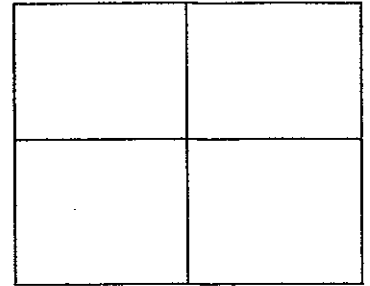
a)  $(x + 4)(x + 8)$

b)  $(-12x - 4)(6x - 2)$

c)  $(x^5 - 3x)(x^3 + 10)$

### Multiplying Binomials – The Box Method

5



### Multiplying Binomials and Trinomials

8 What is the product of the following expressions?

a)  $(x + 1)(x^2 + 3x + 4)$

b)  $(x^2 - 4)(x^2 + 6x + 5)$

c)  $(x - 3)(x^2 - 5x - 7)$

# 7.2 Multiplying Polynomials

## Multiplying Monomials with Monomials and Binomials

1

What is the product of the following expressions below?

a)  $7x^7(4x^2)$

$28x^9$

b)  $7x^3(4x^8 + x)$

$28x^{11} + 7x^4$

c)  $3x^7(6x^6 + x)$

$18x^{13} + 3x^8$

## Multiplying Monomials with other Polynomials

2

Distribute first, then combine "like terms" (same variable, same exponent)

What is the product of each of the following expressions below?

a)  $-7x(4x^2 + 7x - 5)$

$-28x^3 - 49x^2 + 35x$

b)  $-2x^3(6x^6 + 7x^4 + x^2)$

$-12x^9 - 14x^7 - 2x^5$

c)  $4x(5x^3 + 2x^2 - 5x) - 2x^2(7x^2 - x + 8)$

$20x^4 + 8x^3 - 20x^2 - 14x^4 - 2x^3 - 16x^2$   
 $6x^4 + 10x^3 - 36x^2$

d)  $3x(4x^2 + x + 5) + 5x^2(2x^3 + 6x - 1)$

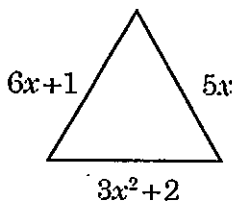
$12x^3 + 3x^2 + 15x + 10x^5 + 30x^3 - 5x^2$   
 $10x^5 + 42x^3 - 2x^2 + 15x$

## Finding Perimeter of Figures

What is the perimeter of the following figures?

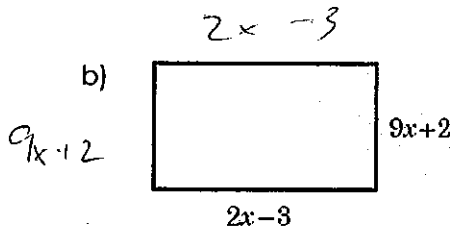
3

a)



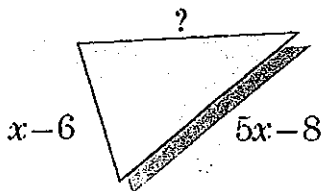
$6x + 1 + 5x + 3x^2 + 2$   
 $3x^2 + 11x + 3$

b)



$4x + 18x + 4 - 6$   
 $22x - 2$

c) If the perimeter of a triangle is  $8x - 11$ , what is the length of the missing side of the triangle?



$8x - 11 = x - 6 + 5x - 8 + 5$   
 $8x - 11 = 6x - 14 + 5$

$2x + 3 = 5$

### Multiplying Binomials - FOIL Method

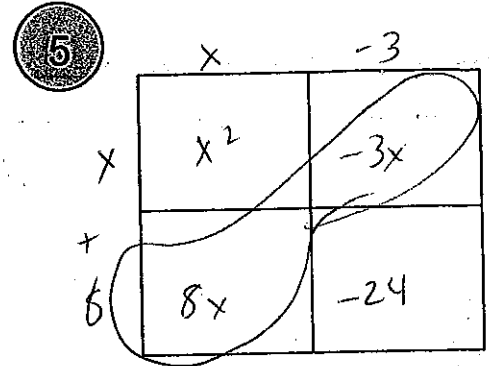
4 What is the product of the expression  $(x-3)(x+8)$ ?

- FIRST  $x^2$   
- Multiply the first two terms together
- OUTSIDE  $-24$   
- Multiply the two outside terms together
- INNER  $-3x$   
- Multiply the two inside terms together
- LAST  $8x$   
- Multiply the last two terms together

$$x^2 - 3x + 8x - 24$$

$$x^2 + 5x - 24$$

### Multiplying Binomials - The Box Method



$$x^2 + 5x - 24$$

6 What is the product of the following expressions?

a)  $(x+2)(x+7)$

b)  $(3x-2)(4x+6)$

c)  $(7x^2+5x)(4x^2+2)$

$$x^2 + 2x + 7x + 14$$

$$x^2 + 9x + 14$$

$$12x^2 - 8x + 18x - 12$$

$$12x^2 + 10x - 12$$

$$28x^4 + 20x^3 + 14x^2 + 10x$$

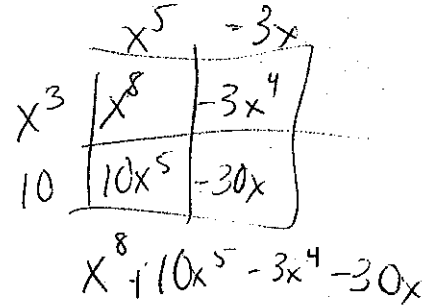
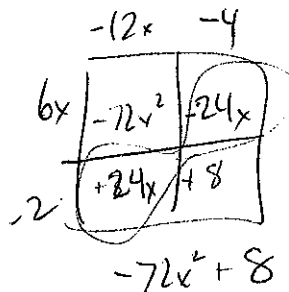
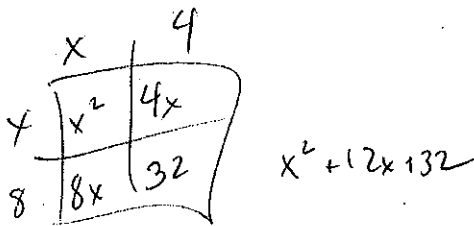
$$28x^4 + 14x^2 + 20x^3 + 10$$

7 What is the product of the following expressions?

a)  $(x+4)(x+8)$

b)  $(-12x-4)(6x-2)$

c)  $(x^5-3x)(x^3+10)$



### Multiplying Binomials and Trinomials

8 What is the product of the following expressions?

a)  $(x+1)(x^2+3x+4)$

b)  $(x^2-4)(x^2+6x+5)$

c)  $(x-3)(x^2-5x-7)$

