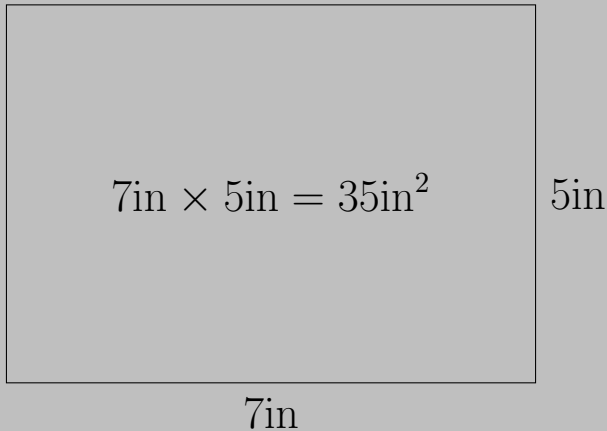
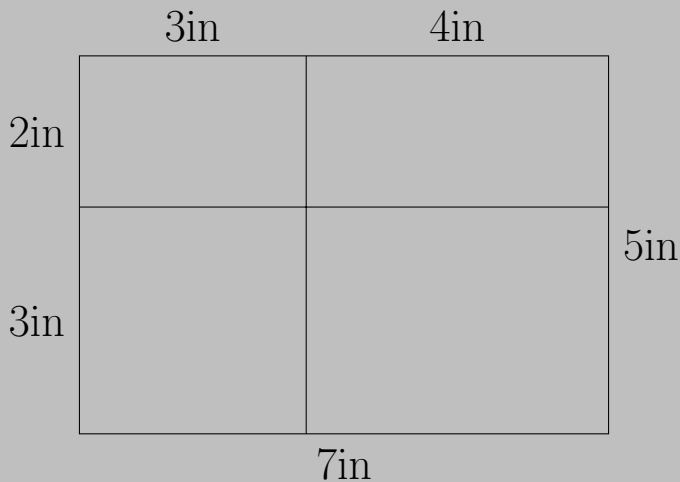


Box Method
for
Polynomial Multiplication
and Division

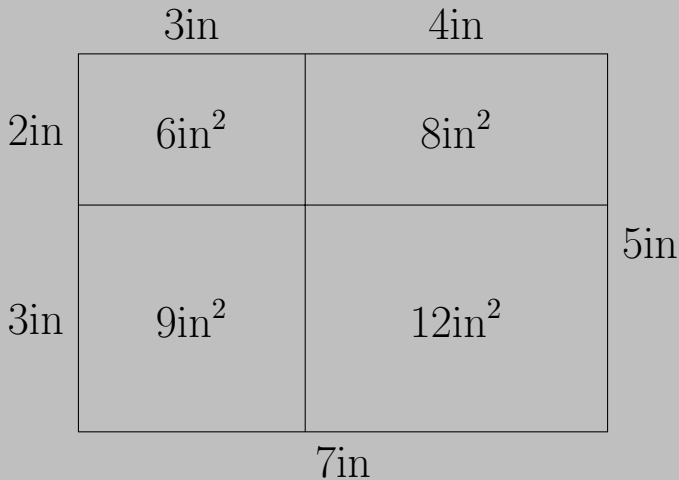
Width \times Height = Area



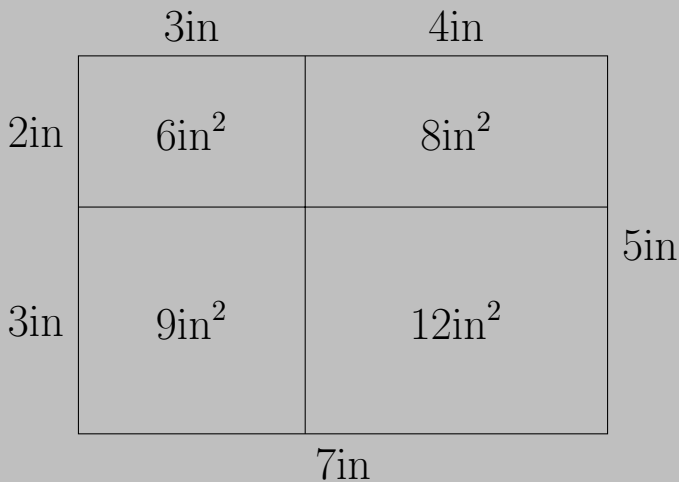
Width \times Height = Area



Width \times Height = Area

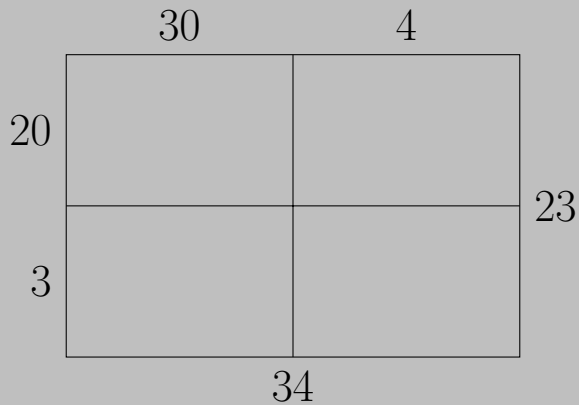


Width \times Height = Area



$$6\text{in}^2 + 8\text{in}^2 + 9\text{in}^2 + 12\text{in}^2 = 35\text{in}^2$$

$$34 \times 23 = 782$$



$$34 \times 23 = 782$$

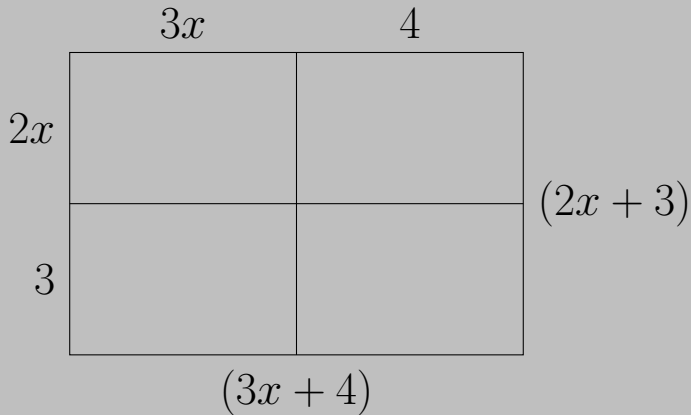
	30	4	
20	600	80	
3	90	12	23
	34		

$$34 \times 23 = 782$$

	30	4	
20	600	80	23
3	90	12	
	34		

$$600 + 80 + 90 + 12 = 782$$

$$(3x + 4)(2x + 3)$$



$$(3x + 4)(2x + 3)$$

	$3x$	4	
$2x$	$6x^2$	$8x$	$(2x + 3)$
3	$9x$	12	
	$(3x + 4)$		

$$(3x + 4)(2x + 3)$$

	$3x$	4	
$2x$	$6x^2$	$8x$	$(2x + 3)$
3	$9x$	12	

$$(3x + 4)$$

$$6x^2 + 8x + 9x + 12$$

$$(3x + 4)(2x + 3) = 6x^2 + 17x + 12$$

	$3x$	4	
$2x$	$6x^2$	$8x$	$(2x + 3)$
3	$9x$	12	
	$(3x + 4)$		

$$6x^2 + 8x + 9x + 12$$

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

	x^2	$2x$	3
x			
1			

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

	x^2	$2x$	3
x	x^3	$2x^2$	$3x$
1	x^2	$2x$	3

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

	x^2	$2x$	3
x	x^3	$2x^2$	$3x$
1	x^2	$2x$	3

$$x^3 + 2x^2 + 3x + x^2 + 2x + 3$$

$$(x^2 + 2x + 3)(x + 1) = x^3 + 3x^2 + 5x + 3$$

$$x^2 \quad 2x \quad 3$$

x	x^3	$2x^2$	$3x$
1	x^2	$2x$	3

$$x^3 + 2x^2 + 3x + x^2 + 2x + 3$$

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

?

x	x^3		
1			

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2		
x	x^3		
1	?		

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2		
x	x^3	?	
1	x^2		

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

x^2 ?

x	x^3	$2x^2$	
1	x^2		

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2	$2x$	
x	x^3	$2x^2$	
1	x^2	?	

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2	$2x$	
x	x^3	$2x^2$?
1	x^2	$2x$	

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2	$2x$	$?$
x	x^3	$2x^2$	$3x$
1	x^2	$2x$	

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1}$$

	x^2	$2x$	3
x	x^3	$2x^2$	$3x$
1	x^2	$2x$	$?$

$$\frac{x^3 + 3x^2 + 5x + 3}{x + 1} = \boxed{x^2 + 2x + 3}$$

	x^2	$2x$	3
x	x^3	$2x^2$	$3x$
1	x^2	$2x$	3