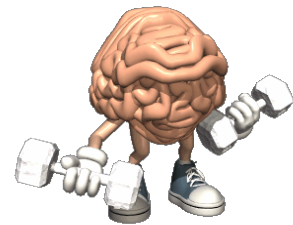


Warm Up

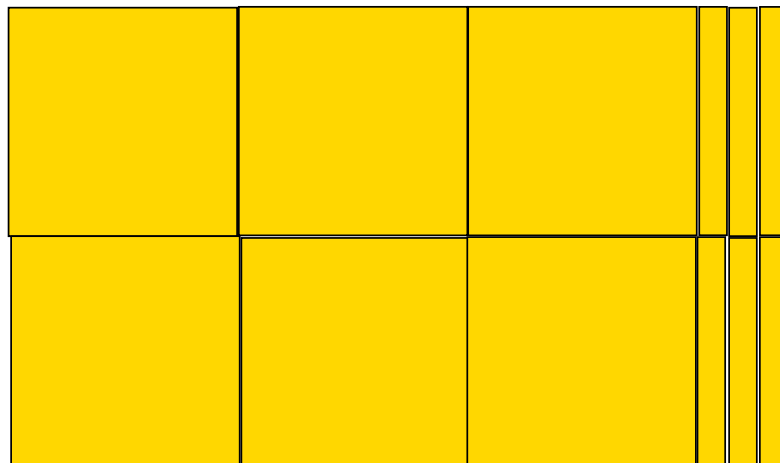


Collect like terms and then simplify the following polynomial

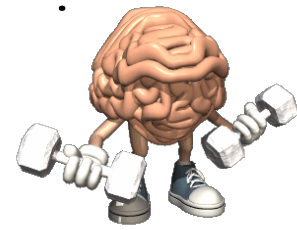
1) $-14x^3 + 17x - 13 + 9x^3 - 6x - 13$

2) $-3n^2 - 3mn + 12mn + 5n^2 + 8m^2 + 3n^2 - 5mn - 7m^2$

3) Determine the perimeter of the following shape



Warm Up

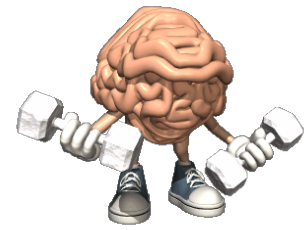


Collect like terms and then simplify the following polynomial

1)

$$\begin{aligned} & -14x^3 + 9x^3 + 17x - 6x - 13 - 13 \\ & -5x^3 + 11x - 26 \end{aligned}$$

Warm Up



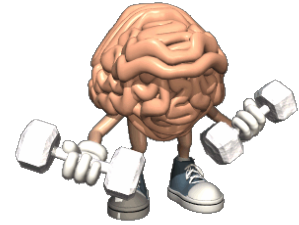
Collect like terms and then simplify the following polynomial

2) $-7m^2 + 8m^2 - 3n^2 + 3n^2 + 5n^2 - 3mn + 12mn - 5mn$

$$-7m^2 + 8m^2 - 3n^2 + 3n^2 + 5n^2 - 3mn + 12mn - 5mn$$

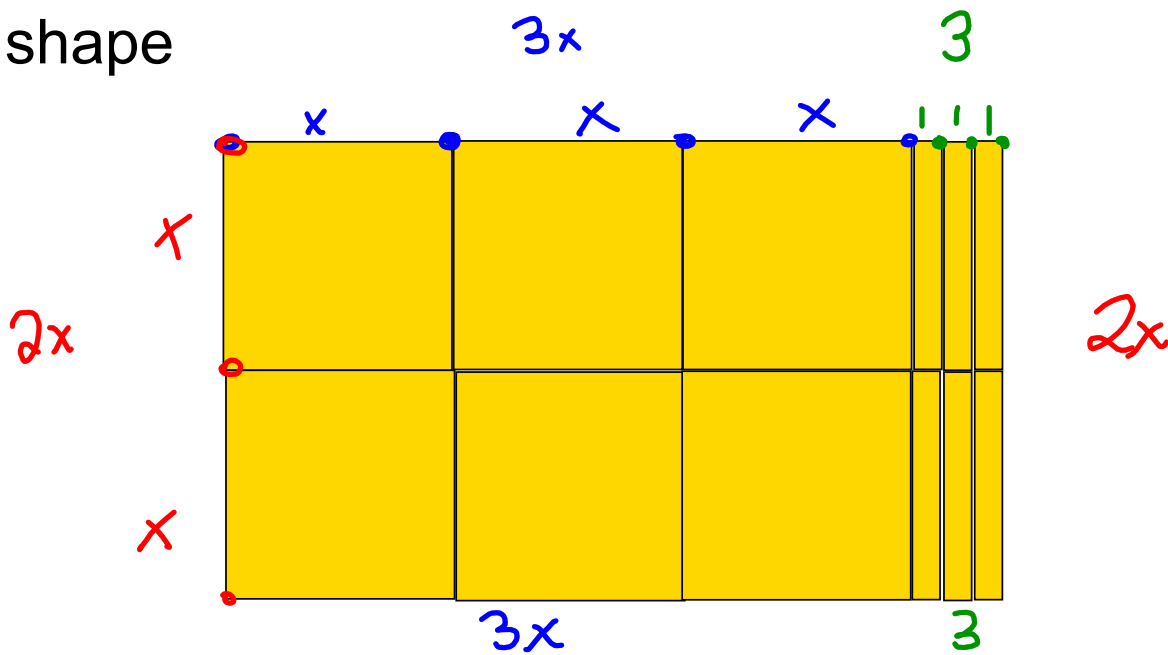
$$m^2 + 5n^2 + 4mn$$

Warm Up



Collect like terms and then simplify the following polynomial

3) Determine the perimeter of the following shape

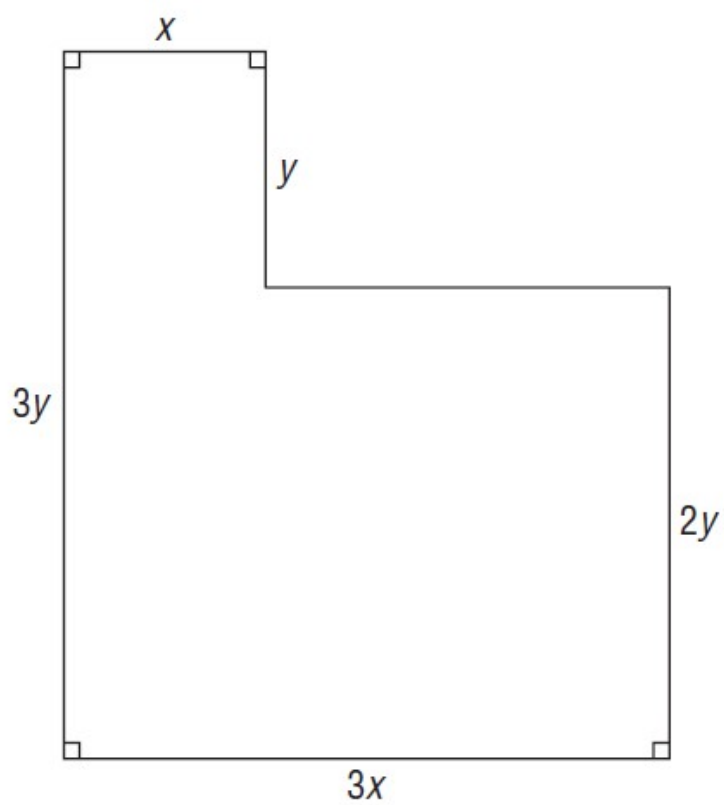


$$P = (3x + 3) + (3x + 3) + (2x) + (2x)$$

$$P = 3x + 3x + 2x + 2x + 3 + 3$$

$$P = 10x + 6$$

22. Write a polynomial for the perimeter of this shape. Simplify the polynomial.



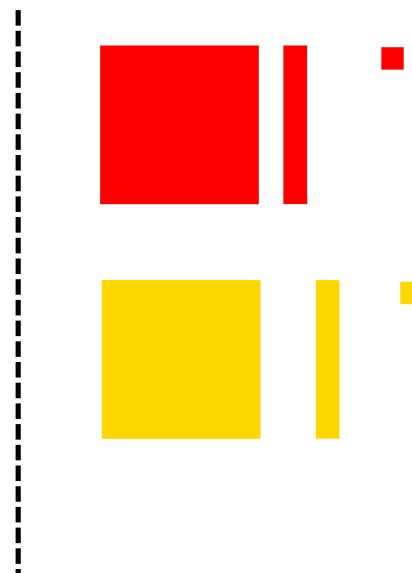
Warm Up



4) Write the polynomial for the following algebra tiles.



5) Model the following Polynomial
 $5x^2 - 2x^2 - 3$

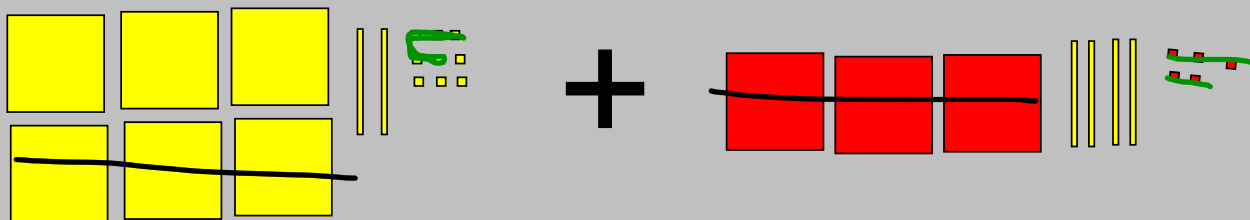


Tiles

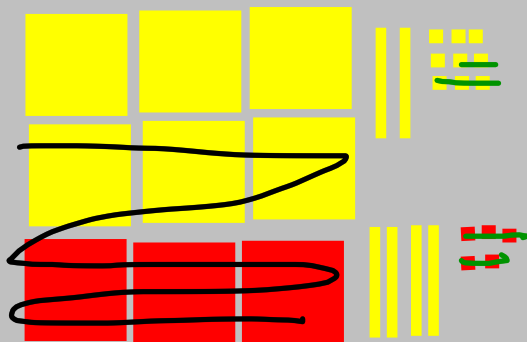
copy down

We can solve the question with tiles.

$$(6x^2 + 2x + 9) + (-3x^2 + 4x - 5)$$



Combine the displays. (Group like Tiles)



Remove Zero Pairs.

The remaining tiles represent



$$3x^2 + 6x + 4$$

$$(6x^2 + 2x + 9) + (-3x^2 + 4x - 5)$$

$$6x^2 + 2x + 9 \quad -3x^2 + 4x - 5$$

$$6x^2 - 3x^2 \quad + 2x + 4x \quad + 9 - 5$$

$$3x^2 \quad + 6x \quad + 4$$



Section 5.3 Adding Polynomials

Day 1

Determine the sum of $6x^2 + 2x + 9$ and $-3x^2 + 4x - 5$

When we write the sum of two polynomials, we write each polynomial in brackets:

$$(6x^2 + 2x + 9) + (-3x^2 + 4x - 5)$$

No Tiles

We often do them without algebra tiles

$$(6x^2 + 2x + 9) + (-3x^2 + 4x - 5)$$

Drop brackets

$$6x^2 + 2x + 9 - 3x^2 + 4x - 5$$

$$6x^2 - 3x^2 + 2x + 4x + 9 - 5$$

$$3x^2 + 6x + 4$$

Copy

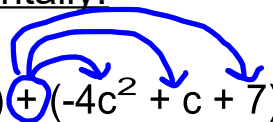
Adding Polynomials Without Tiles

understood +1 in front of second bracket so distribute through

$$\text{Add: } (5c - 11) + (-4c^2 + c + 7)$$

Method 1:

Add horizontally:

$$(5c - 11) + (-4c^2 + c + 7)$$


Remove the brackets.

$$= 5c - 11 - 4c^2 + c + 7$$

Group like terms.

$$= -4c^2 + 5c + c - 11 + 7$$

Combine like terms by adding their coefficients
(remember that c has a coefficient of 1!)

$$= -4c^2 + 6c - 4$$

Method 2:

Add vertically. Line up the like terms, then add their coefficients.

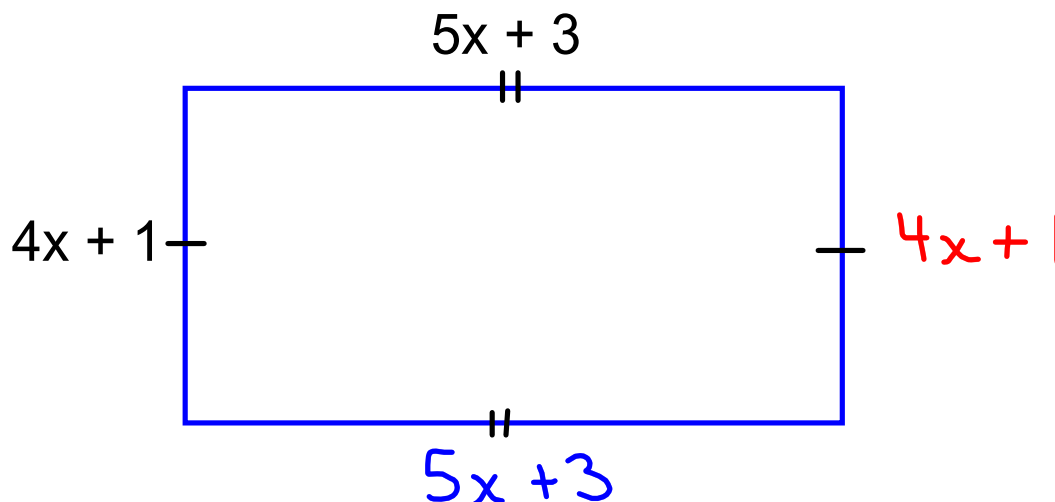
$$\begin{array}{r} 5c - 11 \\ + (4c^2 + c + 7) \\ \hline -4c^2 + 6c - 4 \end{array}$$



$$\text{So, } (5c - 11) + (-4c^2 + c + 7) = -4c^2 + 6c - 4$$

Determining a Polynomial for the perimeter of a rectangle

- a) Write a polynomial for the perimeter of this rectangle.
Simplify the polynomial.



Perimeter = the sum of all sides

$$= (4x + 1) + (4x + 1) + (5x + 3) + (5x + 3)$$

$$= 4x + 1 + 4x + 1 + 5x + 3 + 5x + 3$$

$$= 4x + 4x + 5x + 5x + 1 + 1 + 3 + 3$$

$$= 18x + 8$$

The perimeter is $18x + 8$.

Adding Polynomials in Two Variables

$$\text{Add: } (3s^2 + s - 4c - 5cs + 2s^2) + (-5c^2 + 3cs + 6c - 4s + 7c^2)$$

Remove Brackets.

$$= 3s^2 + s - 4c - 5cs + 2s^2 - 5c^2 + 3cs + 6c - 4s + 7c^2$$

Group like terms.

$$= 3s^2 + 2s^2 + s - 4s - 4c + 6c - 5cs + 3cs - 5c^2 + 7c^2$$

Combine like terms.

$$= 5s^2 - 3s + 2c - 2cs + 2c^2$$

Create a Polynomial that
adds to give $4x^2 + 6x - 4$

$$\begin{array}{r} 628 \\ + 311 \\ \hline 939 \end{array}$$

When given:

$$\begin{array}{r} (-2x^2 + 2x - 6) \\ + (6x^2 + 4x + 2) \\ \hline 4x^2 + 6x - 4 \end{array}$$

Create a Polynomial that
adds to give $-x^2 - 3x + 8$ ●

When given:

$$\begin{array}{r} -7x^2 + 4x - 5 \\ + (6x^2 - 7x + 13) \\ \hline -x^2 - 3x + 8 \end{array}$$



Class/Homework



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MUST USE ALGEBRA TILES

- 3 (b)
- 5) NO algebra tiles
- 8(abefg)
- 9(abdef)



Class/Homework



Page 228 - 229

3 (b) **MUST USE ALGEBRA TILES**

5) **NO algebra tiles**

8(abefg)

9(abdef)

8cdh

9bdgh

10a(i, iii)

#11a,c

#12

#14

#15ace

#16a

#17ac