

Practice

1. Which polynomial sum does each set of tiles represent?



2. Use algebra tiles to add these polynomials.

Sketch the tiles you used.

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

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

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

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

3. Add. Use algebra tiles if it helps.

a) $(2x - 3) + (4x + 5)$

b) $(9x - 5) + (7 - 6x)$

c) $(-x + 2) + (5x - 1)$

d) $(3x + 3) + (-4x - 5)$

e) $(8x - 2) + (-6x - 6)$

f) $(3x - 2) + (-x + 6)$

4. Add. Use algebra tiles if it helps.

a) $(3x^2 - 4x) + (5x^2 + 7x - 1)$

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

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

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

e) $(3x^2 - x + 5) + (-8x^2 + 3x - 1)$

f) $(3x^2 + 2x + 1) + (-2x^2 + 3x - 4)$

5. Add: $(3x^3 + 2x^2 - x + 1) + (-2x^3 - 6x^2 + 4x - 3)$

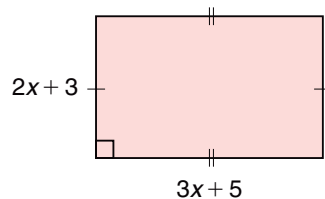
Explain how you did it.

Which tools could you use to help you?

Polynomials can be used to represent side lengths of figures.

Example

Write a simplified expression for the perimeter of this rectangle.



Solution

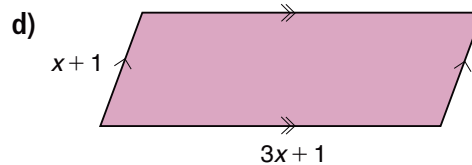
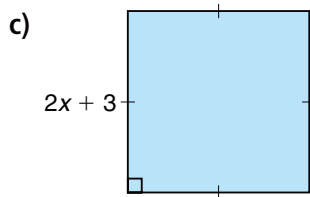
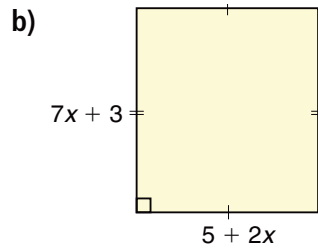
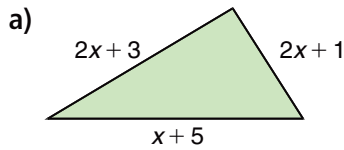
The perimeter is the sum of the measures of the four sides.

$$\begin{array}{r} 2x + 3 \\ + 2x + 3 \\ + 3x + 5 \\ + 3x + 5 \\ \hline 10x + 16 \end{array}$$

The perimeter is $10x + 16$.

6. Write an expression for the perimeter of each figure.

Simplify the expression.



Need Help?

Read the Example on page 259.



7. Choose one of the figures in question 6.

- Evaluate the unsimplified expression for the perimeter when $x = 8$.
- Evaluate the simplified expression for the perimeter when $x = 8$.
- Is it better to substitute into an expression before it is simplified or after it is simplified? Explain.

8. Create a polynomial that is added to $2x^2 + 3x + 7$ to get each sum.

- | | |
|--------------------|--------------------|
| a) $4x^2 + 5x + 9$ | b) $3x^2 + 4x + 8$ |
| c) $2x^2 + 3x + 7$ | d) $x^2 + 2x + 6$ |
| e) $x + 5$ | f) 4 |

9. **Assessment Focus** Two polynomials are added.

Their sum is $3x^2 - 2x + 5$.

Write two polynomials that have this sum.

How many different pairs of polynomials can you find?

Which tools did you use to help you?

10. **Take It Further** The sum of 2 polynomials is $2x^2 - 7x + 3$.

One polynomial is $3x^2 - 5x - 2$.

What is the other polynomial?

Explain how you found it.

In Your Own Words

Write two things you know about adding polynomials.

Use an example to illustrate.