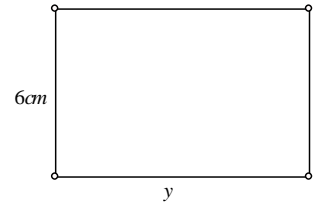


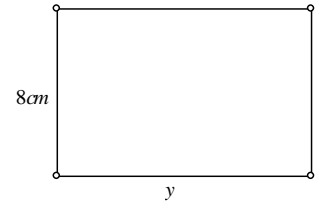
# Algebraic Areas and Perimeters

## Warm Up

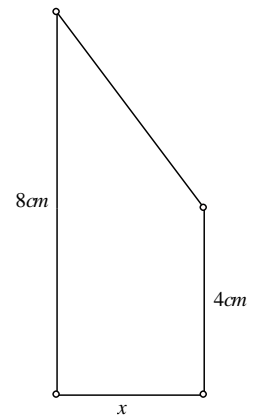
1. The area of this rectangle is  $54\text{cm}^2$ . Find the value of  $y$  and the perimeter.



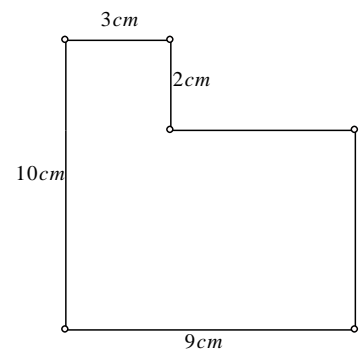
2. The perimeter of this rectangle is  $30\text{cm}$ . Find the value of  $y$  and the area.



3. The area of this trapezoid is  $42\text{cm}^2$ . Find the value of  $x$ .



4. Find the area and the perimeter of this figure.



## Algebraic Areas and Perimeters

1. The area of the rectangle shown on the right is represented by the expression  $x^2 + 3x$ . The length of the side AB is represented by the expression  $x + 3$ . Find an expression for the perimeter of the rectangle.



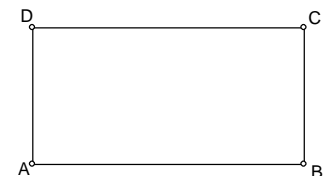
2. The area of the rectangle shown on the right is represented by the expression  $x^2 + 5xy + 6y^2$ . The length of the side AB is represented by the expression  $x + 2y$ . Find an expression for the perimeter of the rectangle.



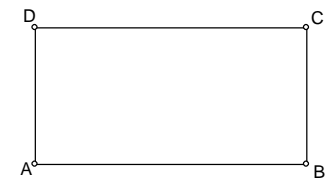
3. The perimeter of the rectangle shown on the right is represented by the expression  $6x + 2y$ . The length of the side AB is represented by the expression  $2x - y$ . Find an expression for the area of the rectangle.



4. The area of the rectangle shown on the right is represented by the expression  $2x^2 - 5xy - 3y^2$ . The perimeter of the rectangle is represented by the expression  $6x - 4y$ . Find an expression for the length of each side of the rectangle.



5. The area of the rectangle shown on the right is represented by the expression  $3x^2 + xy - 2y^2$ . The length of the side AB can be represented by  $3x - 2y$ . If the perimeter is 34 units and the area is 72 square units, find  $x$  and  $y$ .



6. The area of the trapezoid shown on the right is given by the expression  $4x^2 + 4xy - 3y^2$ . The length of the side AB is given by  $2x - y$ . The length of the side BC is given by  $3x + 5y$ . Find an expression for the length AD.

