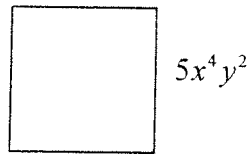# Polynomials, Area, and Perimeter

Name: _____

Period: _____

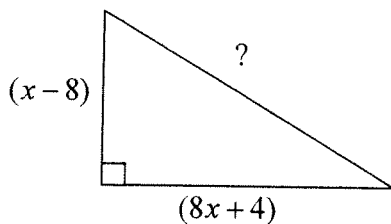**1.** What is the area of this square with sides of $5x^4y^2$?

$5x^4y^2$

What is the perimeter of the same figure?

2. Find the perimeter and area of a rectangle with a length of $(6x-10)$ and a width of $(4x+3)$.
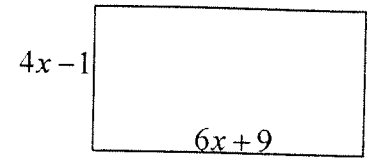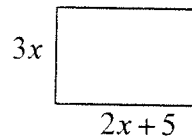
Perimeter: _____

Area: _____

3. The perimeter of the triangle below is $(12x-7)$. Find the length of the missing side.

$(x-8)$?
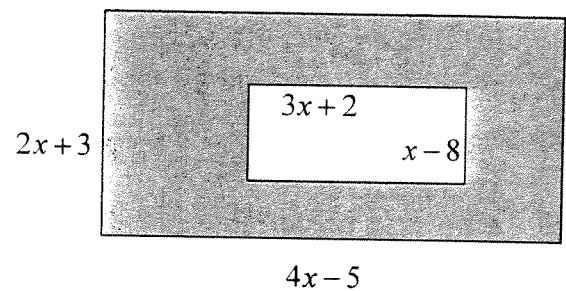
$(8x+4)$

4. Find the length of the side of the square if the perimeter is $44x^3+36y$

5. Find the total area of both rectangles.

$3x$ $2x+5$

$4x-1$ $6x+9$

Total area: _____

6. Find the area of the shaded region.

$2x+3$ $3x+2$ $x-8$

$4x-5$

Shaded region: _____

7. Find the perimeter and area of a rectangle with length (6) and width $(x+2)$.

Perimeter: _____
Area: _____

8. If the area of a rectangle with length $(4x)$ is $4x^2+12x$. Find the width.

9. The length of a rectangular garden is 4 less than twice the width. Find the perimeter and area of the garden.

Perimeter: _____

Area: _____

10. The perimeter of a square is $40x^4 + 16x^2$. Find the area.

11. One side of a square is $(-3n + 7)$. What is its perimeter?

12. The perimeter of a square is $(4x - 44)$. What is the length of each side?

13. The quantity $4x^2 - 3x + 8$ is subtracted from $x^2 - 2x + 11$. Simplify.

14. NASA engineers are designing a mirror that will be attached to a satellite. The mirror will be the shape of a polygon with 4 sides. The lengths of 3 of the sides are $2x + 5$, $6x - 7$, and $x - 4$. The perimeter of the mirror must be $12x + 12$. What does the length of the 4th side need to be?

15. One side of a triangle has a length of $8m^2 - 6m - 14$. Another side has a length of $25 - 3m$. The last side has a length of $1 - m - m^2$. What is the perimeter, in terms of m, of the triangle?

16. An empty jar has a volume of $8x^2 + 2x - 4$ cubic inches. Josh pours $4x^2 - 3x + 2$ cubic inches of water into the jar. How many more cubic inches of water could the jar still hold?