Multiplying Polynomials

Name: _____

Find the product of the polynomials. Use vertical, horizontal, or box method to multiply.
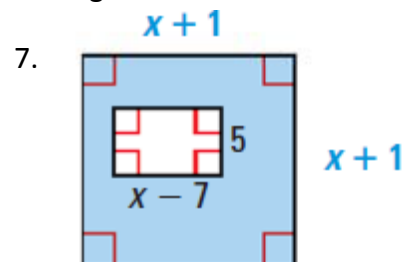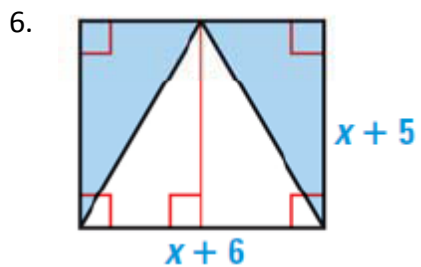
1. $(2x^2 - 5x)(7x + 2)$

2. $(x - 9)^3$

3. $(6y^2 - 9y + 7)(5y^2 + 2y - 9)$

4. Given $R(x) = x^2 + 2x - 1$, evaluate $R(3x + 1)$.

5. Given $V(t) = 2 - t^2$, evaluate $V(t^2 + 2t)$.

Write the polynomial which represents the area of the shaded region.

6.

$x + 5$

$x + 6$

7.

$x + 1$

5

$x + 1$

$x - 7$

8. You are designing a frame to surround a rectangular picture. The width of the frame around the picture is the same on every side, as shown.

a. Write a polynomial that represents the total area of the picture and the frame.

22 in.

20 in.

x in.

x in.
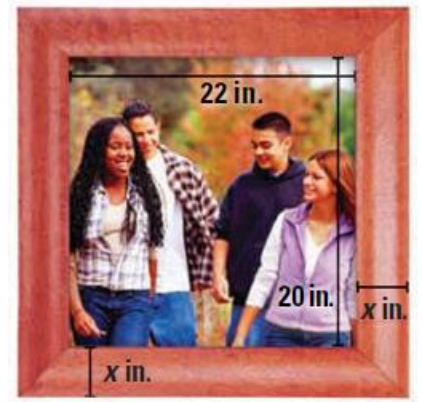
b. Find the combined area of the picture and the frame when the width of the frame is 4 inches.

9. A triangle has a base of 4x and a height of 2x+12. Find the polynomial expression for the area of the triangle.

10. A swimming pool has a length of 3x+2 ft, a width of x+3 ft, and a depth of x – 6 ft. Find the polynomial expression representing the volume of the swimming pool.