## 8-4   Practice                                    Form K

Multiplying Special Cases

**Simplify each expression.**

**1.** $(y + 1)^2$

$(y+1)(y+1)$

$y^2 + 2y + 1$

**2.** $(n + 11)^2$

$(n+11)(n+11)$

$n^2 + 22n + 121$

**3.** $(t + 7)^2$   $(t+7)(t+7)$

$t^2 + 14t + 49$

**4.** $(3m + 6)^2$

$(3m+6)(3m+6)$

$9m^2 + 18m + 18m + 36$

$9m^2 + 36m + 36$

**5.** $(4x + 1)^2$

$(4x+1)(4x+1)$

$16x^2 + 4x + 4x + 1$

$16x^2 + 8x + 1$

**6.** $(3n + 2)^2$   $(3n+2)(3n+2)$

$9n^2 + 6n + 6n + 4$

$9n^2 + 12n + 4$

**7.** $(t - 3)^2$

$(t-3)(t-3)$

$t^2 - 6t + 9$

**8.** $(7v - 3)^2$

$(7v-3)(7v-3)$

$49v^2 - 21v - 21v + 9$

$49v^2 - 42v + 9$

**9.** $(6p - 5)^2$   $(6p-5)(6p-5)$
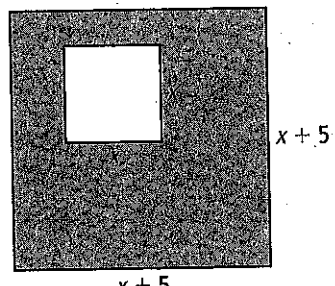
$36p^2 - 30p - 30p + 25$

$36p^2 - 60p + 25$

The figures below are squares. Find an expression for the area of each shaded region. Write your answers in standard form.
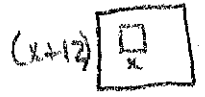
**10.**



$x + 8$
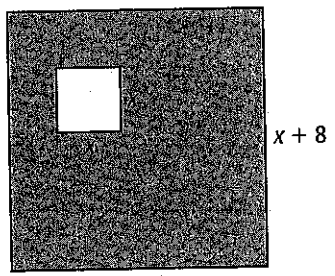
Shaded area − unshaded area

$(x+8)^2 \quad - \quad (x)^2$

$x^2 + 16x + 64 - x^2 = 16x + 64$

**11.**



$x + 5$

Shaded area − unshaded area

$(x+5)^2 \quad - \quad (x)^2$

$x^2 + 10x + 25 - x^2 = 10x + 25$

**12.** A flat, square roof needs a square patch in the corner to seal a leak. The side length of the roof is $(x + 12)$ ft and the side length of the patch is $x$ ft. What is the area of the good part of the roof?

$(x+12)^2 - (x)^2$

$(x+12)(x+12)$

$x^2 + 24x + 144 - x^2 = 24x + 144$

**13.** A white, square quilt has a purple square in the center. The side length of the purple square is $(x - 5)$ inches and the width of the quilt is 60 inches. What is the area of the white part of the quilt?
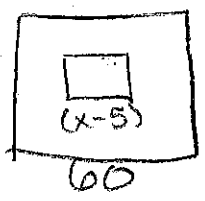
$3600 - (x-5)^2$

$3600 - (x^2 - 10x + 25)$

$-x^2 + 10x + 3575$