EXERCISE 3.9

A 1. Find each product.

(a) $(x + 3)(x + 1)$ (b) $(a + 5)(a + 7)$
(c) $(m + 3)(m + 6)$ (d) $(t + 11)(t + 3)$
(e) $(d + 6)(d + 7)$ (f) $(4 + m)(2 + m)$
(g) $(r + 6)(r + 10)$ (h) $(1 + s)(s + 12)$

2. Find each product.

(a) $(m - 3)(m + 2)$ (b) $(x - 5)(x - 6)$
(c) $(a - 5)(a + 6)$ (d) $(b - 3)(b + 6)$
(e) $(y - 3)(y - 3)$ (f) $(m - 10)(m + 6)$
(g) $(d - 3)(d + 3)$ (h) $(s - 7)(s - 8)$

3. Find each product.

(a) $(x + 3)^2$ (b) $(y - 2)^2$
(c) $(t + 4)^2$ (d) $(a - 5)^2$
(e) $(s + 5)^2$ (f) $(x + 7)^2$
(g) $(m - 1)^2$ (h) $(n + 1)^2$

B 4. Find each product.

(a) $(2x + 1)(x + 6)$ (b) $(3a - 4)(2a - 1)$
(c) $(2m - 7)(m + 2)$ (d) $(3x - 1)(3x + 1)$
(e) $(2b - 3)(2b - 3)$ (f) $(d + 6)(2d - 5)$
(g) $(1 - 3r)(5 + 2r)$ (h) $(4r + 5)(r - 3)$
(i) $(3t - 5)(2t + 3)$ (j) $(1 - 3x)(5x - 7)$

5. Find each product.

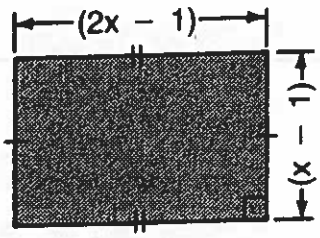
(a) $(7x - 5)(x - 2)$ (b) $(3m + 7)(m - 2)$
(c) $(1 - 5b)(1 + 5b)$ (d) $(3x - y)(3x + y)$
(e) $(2a + b)(3a + b)$ (f) $(a + b)(a + b)$
(g) $(3x - 2y)(x - y)$
(h) $(2b + c)(3b - 2c)$

6. Find each product.

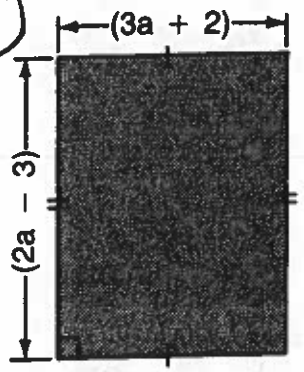
(a) $(3m + 2)^2$ (b) $(5a + 1)^2$
(c) $(3a - 2)^2$ (d) $(4b + 2)^2$
(e) $(2x - 7)^2$ (f) $(6x - 1)^2$
(g) $(2y + 3)^2$ (h) $(5t - 3)^2$
(i) $(6m + 1)^2$ (j) $(1 - 2r)^2$
(k) $(1 + 6a)^2$ (l) $(2s - 1)^2$

7. Find an expression for each area and simplify.

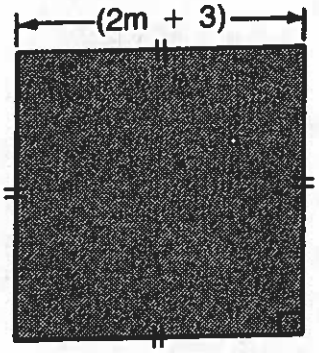
(a)



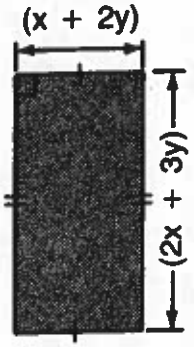
(b)



(c)



(d)



C 8. Expand and simplify.

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

$= (x + 3)(x^2 - 2x + 2)$
$= x^3 - 2x^2 + 2x + 3x^2 - 6x + 6$
$= x^3 + x^2 - 4x + 6$

(b) $(x + 2)(x^2 + 3x + 3)$
(c) $(m - 2)(2m^2 - m - 1)$
(d) $(s - 3)(2s^2 + 3s - 3)$
(e) $(2x - 1)(x^2 - 3x - 4)$
(f) $(2b + 3)(2b^2 - 3b + 6)$
(g) $(2a^2 - 3a + 2)(3a + 5)$
(h) $(x^2 - 2x - 1)(x^2 + 3x + 1)$
(i) $(2m^2 - 3m + 1)(m^2 + m - 3)$