

# 2.3 Homework

p. 70 2 – 24 even



Find the product of the square of the binomial.

$$(a + b)^2 = a^2 + 2ab + b^2$$

2.  $(m + 11)^2$

$$(m + 11)^2 = m^2 + 2m(11) + (11)^2$$

$$= m^2 + 22m + 121$$

4.  $(3m + 7)^2$

$$(3m + 7)^2 = (3m)^2 + 2(3m)(7) + (7)^2$$

$$= (3m)(3m) + 42m + 49$$

$$= 9m^2 + 42m + 49$$



6.  $(7a - 6)^2$

$$(7a - 6)^2 = (7a)^2 - 2(7a)(6) + (6)^2$$

$$= (7a)(7a) - 84a + 36$$

$$= 49a^2 - 84a + 36$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

8.  $(2x + y)^2$

$$(2x + y)^2 = (2x)^2 + 2(2x)y + y^2$$

$$= (2x)(2x) + 4xy + y^2$$

$$= 4x^2 + 4xy + y^2$$

$$(a + b)^2 = a^2 + 2ab + b^2$$



Find the product of the sum and difference.

$$(a - b)(a + b) = a^2 - b^2$$

10.  $(a - 9)(a + 9)$

$$\begin{aligned} a &= a & & = a^2 - 9^2 \\ b &= 9 & & = a^2 - 81 \end{aligned}$$

12.  $(5r + 1)(5r - 1)$

$$\begin{aligned} &= (5r)^2 - 1^2 \\ &= 25r^2 - 1 \end{aligned}$$

$$\begin{aligned} a &= 5r \\ b &= 1 \end{aligned}$$

14.  $(7p - 2)(7p + 2)$

$$\begin{aligned} &= (7p)^2 - 2^2 \\ &= 49p^2 - 4 \end{aligned}$$

$$\begin{aligned} a &= 7p \\ b &= 2 \end{aligned}$$



$$(a-b)(a+b) = a^2 - b^2$$

16.  $(4x + 3)(4x - 3)$

$$a = 4x \quad = (4x)^2 - 3^2$$

$$b = 3 \quad = 16x^2 - 9$$

18.  $(5 - 2y)(5 + 2y)$

$$= (5)^2 - (2y)^2$$

$$= 25 - 4y^2$$

$$a = 5$$

$$b = 2y$$



**Describe how you can use mental math to find the product.**

20.  $43 \cdot 57$

$$= (50 - 7)(50 + 7)$$

$$= 50^2 - 7^2$$

$$= 2500 - 49$$

$$= 2451$$

$$(a - b)(a + b) = a^2 - b^2$$



Perform the indicated operation using the functions  $f(x) = 4x + 0.5$  and  $g(x) = 4x - 0.5$ .

$$22. f(x) \cdot g(x) = (4x + 0.5)(4x - 0.5)$$

$$= (4x)^2 - (0.5)^2$$

$$= 16x^2 - 2.5$$

$$(a - b)(a + b) = a^2 - b^2$$

$$a = 4x$$

$$b = 0.5$$

$$24. (g(x))^2$$

$$= (4x - 0.5)^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$= (4x)^2 - 2(4x)(0.5) + (0.5)^2$$

$$= 16x^2 - 4x + 2.5$$

