2.2 Homework
Math I

p. 66 2 – 22 even

p. 67 18, 20

Find the product.

2. $-5a^3(4a^4 - 3a + 1)$

$-5a^3(4a^4)$	$-5a^3(-3a)$	$-5a^3(1)$
$-20a^7$	$+15a^4$	$-5a^3$

$$-20a^7 + 15a^4 - 5a^3$$

Find the product. **4.** $(3x + 1)(2x - 5)$

$3x(2x) + 3x(-5) + 1(2x) + 1(-5)$

$6x^2 - 15x + 2x - 5$

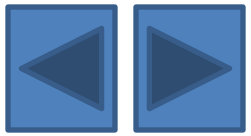
$6x^2 - 13x - 5$

6. $(6a - 3)(4a - 1)$

$6a(4a) + 6a(-1) - 3(4a) - 3(-1)$

$24a^2 - 6a - 12a + 3$

$24a^2 - 18a + 3$



Find the product.

8. $(8m + 7)(2m + 3)$

$8m(2m) \quad +8m(3) \quad +7(2m) \quad +7(3)$

$16m^2 \quad +24m \quad +14m \quad +21$

$16m^2 + 38m + 21$

10. $(2z - 7)(-z + 3)$ $2z(-z) \quad +2z(3) \quad -7(-z) \quad -7(3)$

$-2z^2 \quad +6z \quad +7z \quad -21$

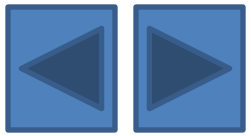
$-2z^2 + 13z - 21$

12. $(n + 1)(n^2 + 4n + 5)$

$(n+1)n^2 \quad +(n+1)4n \quad +(n+1)5$

$n^3+n^2 \quad +4n^2+4n \quad +5n+5$

n^3+5n^2+9n+5

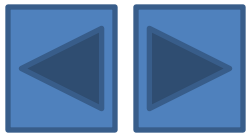


14. $(2s + 5)(s^2 + 3s - 1)$

$$(2s+5)s^2 \quad +(2s+5)3s \quad +(2s+5)(-1)$$

$$2s^3+5s^2 \quad +6s^2+15s \quad -2s-5$$

$$2s^3+11s^2+13s-5$$



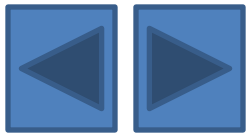
Simplify the expression.

16. $a(3a + 1) + (a + 1)(a - 1)$

$$a(3a) + a(1) + a(a) + a(-1) + 1(a) + 1(-1)$$

$$3a^2 + a + a^2 - a + a - 1$$

$$4a^2 + a - 1$$



18. $(m + 7)(m - 3) + (m - 4)(m + 5)$

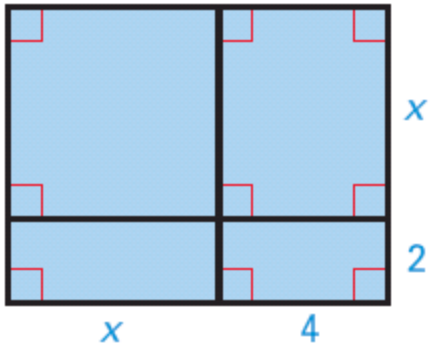
$m(m) \quad +m(-3) \quad +7(m) \quad +7(-3) \quad +m(m) \quad +m(5) \quad -4(m) \quad -4(5)$

$m^2 \quad -3m \quad +7m \quad -21 \quad +m^2 \quad +5m \quad -4m \quad -20$

$$2m^2 + 5m - 41$$

Write a polynomial for the area of the model.

20.



Area = length X width

Area = (x + 4)(x + 2)

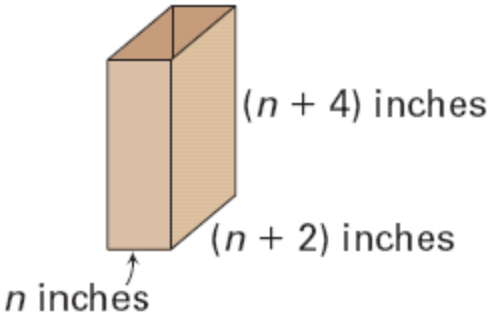
$$x(x) \quad +x(2) \quad +4(x) \quad +4(2)$$

$$x^2 \quad +2x \quad +4x \quad +8$$

$$x^2+6x+8$$

22. Shipping A box used for shipping is shown at the right.

a. Write a polynomial that represents the area of the base of the box.



Area = length X width

$$= (n+2)(n)$$

$$= n^2 + 2n$$

b. Write a polynomial that represents the volume of the box.

Volume = length • width • height

$$= (n^2 + 2n)(n+4)$$

$$= (n^2)(n) + (n^2)(4) + (2n)(n) + (2n)(4)$$

$$= n^3 + 4n^2 + 2n^2 + 8n = n^3 + 6n^2 + 8n$$

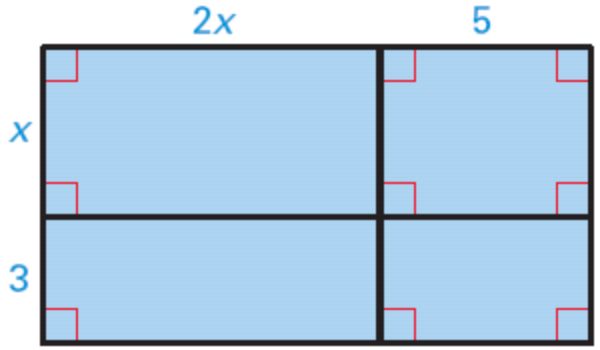
c. What is the volume if the length of the shortest side is 8 inches?

$$= (8)^3 + 6(8)^2 + 8(8) = 512 + 6(64) + 64$$

$$= 512 + 384 + 64 = 960 \text{in}^3$$

Write a polynomial for the area of the model.

18.



Area = length X width

Area = (2x + 5)(x + 3)

$$2x(x) \quad +2x(3) \quad +5(x) \quad +5(3)$$

$$2x^2 \quad +6x \quad +5x \quad +15$$

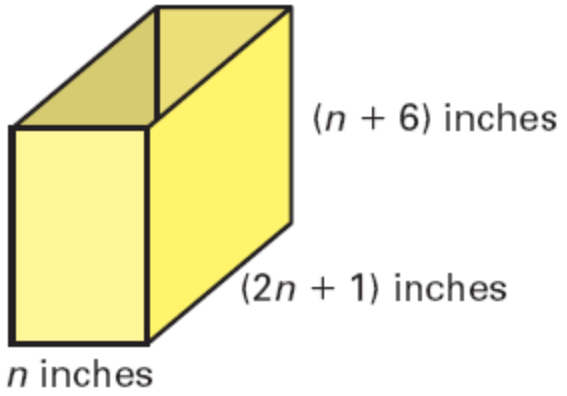
$$2x^2+11x+15$$

20. Gifts An open gift box is shown at the right.

a. Write a polynomial that represents the area of the bas of the box.

Area = length X width

$= (2n+1)\ (n)$ $= 2n^2 + n$



b. Write a polynomial that represents the volume of the box.

Volume = length • width • height

$= (2n^2 + n)$ $(n+6)$

$= (2n^2)(n)$ $+ (2n^2)(6)$ $+ (n)(n)$ $+ (n)(6)$

$= 2n^3$ $+ 12n^2$ $+ n^2$ $+ 6n$ $= 2n^3 + 13n^2 + 6n$

c. Write a polynomial for the area of the base if the length and width increase by 4.

$= 2(4)^3 + 13(4)^2 + 6(4)$ $2(64) + 13(16) + 24$

$= 128 + 208 + 24 = 360 \text{in}^3$