

Algebra II  
Unit 2A Review

**Simplify.**

1.  $(2a^2 - 4a + 3) + (6a^2 + 4a - 3)$

2.  $(2x^3 + 3x^2 + x + 2) - (x^2 - x + 4)$

3.  $(9x - 2) + (2x^4 - 5x + 1)$

4.  $(7m^2 - 3m + 8) - (-3m^2 - 6m + 5)$

5.  $(x^2 + 1) - (x^2 - 1) + (x^2 + 1)$

6.  $(2x^2 + 1) + (x^2 - 2x + 1) - (2x^2 + 8)$

7.  $(3x + 5) - (x^2 - 1) - (2x^2 + x)$

8.  $-3x(5x^2 - 4x)$

9.  $2x(x^3 + 5x^2 + 2 + 3x)$

10.  $(x^2 + 4)(x - 3)$

11.  $(c + 6)(c - 6)$

12.  $(5x + 2)(3x - 1)$

13.  $(5x + 8)(x^2 - 1)$

14.  $(7x + y)^2$

15.  $(2x + 1)(4x^2 - 6x + 8)$

16.  $(y + 2)(y - 3)(y + 4)$

**Divide using long division.**

17.  $(10x^4 + 5x^3 + 4x^2 - 9) \div (x + 1)$

18.  $(x^3 - 14x + 8) \div (x + 4)$

19.  $(x^2 - 4x + 3) \div (x - 2)$

20.  $(2x^2 + 7x + 8) \div (x - 2)$

**Divide using synthetic division.**

21.  $(10x^4 + 5x^3 + 4x^2 - 9) \div (x + 1)$

22.  $(x^3 - 14x + 8) \div (x + 4)$

23.  $(x^2 - 4x + 3) \div (x - 2)$

24.  $(2x^2 + 7x + 8) \div (x - 2)$

**Use Pascal's Triangle to expand the following binomials.**

25.  $(x + 2)^4$

26.  $(a - 5)^6$

27.  $(2x + 5)^5$

28.  $(3m - 1)^3$

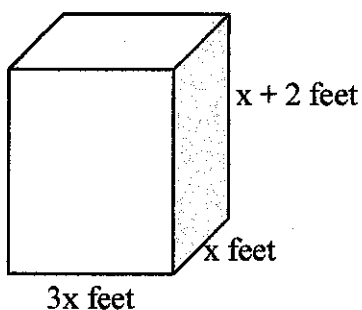
## Applications

29. Find the area of each rectangle by drawing an area model.

a. length  $(2x + 3)$  width  $(x + 1)$

b. length  $(4x + 1)$  width  $(2x + 4)$

30. This diagram shows the dimensions of a cardboard box.



Which expression represents the volume, in cubic feet, of the box?

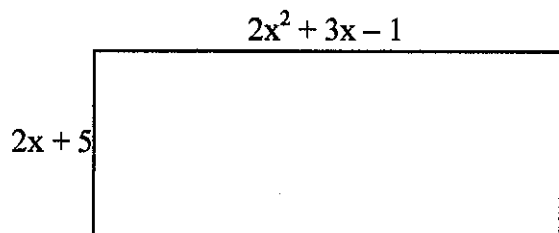
A.  $3x^3 + 2$  cubic feet

B.  $5x^3 + 2$  cubic feet

C.  $3x^3 + 6x^2$  cubic feet

D.  $5x^3 + 6x^2$  cubic feet

31. Find the perimeter and area of the rectangle.



32. Find the perimeter and area of the figure.

