Directions: Suppose you cut an x-inch square out of each corner of an 8.5 inch by 11 inch sheet of paper. Fold the sides up to form a box without a top.

1. Write an expression to calculate each dimension of the box.
2. Write an expression to calculate the volume of the box.
3. Graph the volume using your TI.

 

1. Determine the dimensions of the box that maximizes the volume and then find the maximum volume.

5. Write each polynomial function in standard form.

1. y = (3x - 4)(x + 3)
2. a = (12 - w)(7 - 2w)
3. v = h(h + 3)(2h - 5)
4. c = (2b + 5)(4b2 – 10b + 25)

6. Write each polynomial function in factored form.

a. v = h3 – 27

b. y = 6x2 – 27x – 15

c. y = 2x3 + x2 – 3x.

 d. p = 64q3 + 343