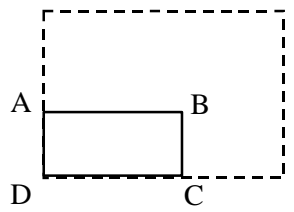


1 The volume of a right prism with a rectangular base is  $2x^3 + x^2 - 13x + 6$ . The height of the prism is  $2x - 1$ . **What are the possible dimensions of its base?**

2 In the figure below, the area of rectangle ABCD in square units is expressed by the trinomial  $2x^2 - 11x + 12$ , the measure of its sides being binomials. Sides DA and DC are each extended 4 units to form a new rectangle. In square units, **what algebraic expression represents the area of the new rectangle?**



3 **Factor** the following polynomials:

a)  $6x^2 - 2x - 4$

b)  $7x^5y^2 + 21x^2y^3 + 14xy^4$

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

d)  $15xy + 20y^2 - 18x - 24y$

e)  $x^8 - 256$

f)  $(a + b)^2 - 16$

g)  $4x^2 + 12x + 9$

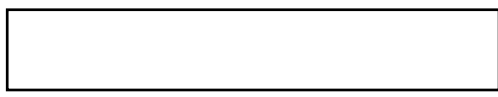
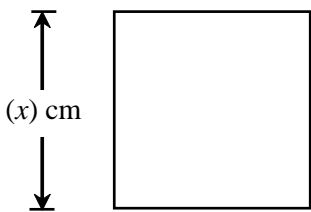
h)  $8x^2 - 26x + 15$

4 **Solve** the following two 2<sup>nd</sup> degree equations.

a)  $5x^2 - 3x = 0$

b)  $6x^2 - 13x + 2 = 0$

5 The square and the rectangle shown below have the same area. Each side of the square measures  $(x)$  cm. The area of the rectangle is  $(2x^2 - 7x - 30)$  cm<sup>2</sup>.



Area:  $(2x^2 - 7x - 30)$  cm<sup>2</sup>

**What is the perimeter of the rectangle?**

6

Today, a father is 5 years older than triple his daughter's age. Eight years ago, the product of their ages was 180. **How old will each person be in 10 years?**