

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 – MARCH 2007
ROUND 3 ALG 2 POLYNOMIAL FUNCTIONS

ANSWERS

A) _____

B) _____

C) _____

- A) Clearly, $x = 1$ is a zero of the polynomial $p(x) = x^3 - 2x + 1$.
Determine the exact value of the larger of the two remaining zeros.
- B) Given: $y = p(x)$ is a cubic polynomial (i.e. 3rd degree), $p(-1) = p(2) = p(1/2) = 0$ and $p(0) = 2$
Find the remainder when $p(x)$ is divided by $(x - 1)$.
- C) The width of an **open** box (i.e. **without a top**) is two less than its length and its height is 7 less than 6 times its length. Numerically, the volume of the box is 5 less than 6 times its length. Find all possible surface areas of the exterior of such a box.