

Turkey Junior National Olympiad 1996

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by xeroxia

- 1 There are 20 balls in a bag. a of them are red, b of them are white, and c of them are black. It is known that
- if we double the white balls, the probability of drawing one red ball is $\frac{1}{25}$ less than the probability of drawing one red ball at the beginning, and
 - if we remove all red balls, the probability of drawing one white ball is $\frac{1}{16}$ more than the probability of drawing one white ball at the beginning.

Find a, b, c .

- 2 Write out the positive integers consisting of only 1s, 6s, and 9s in ascending order as in: 1, 6, 9, 11, 16,
- Find the order of 1996 in the sequence.
 - Find the 1996th term in the sequence.
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- 3 Let P be a point inside of equilateral $\triangle ABC$ such that $m(\widehat{APB}) = 150^\circ$, $|AP| = 2\sqrt{3}$, and $|BP| = 2$. Find $|PC|$.
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