

MATHEMATICS ENRICHMENT CLUB.¹
Problem Sheet 2, May 14, 2013

1. One bell rings every 10 minutes, while another rings every 12 minutes. If the bells have just rung together, after how many minutes will they next ring together?
2. The two digit number x has **digits** $a3$ and y has **digits** $3a$. If $6528x = 8256y$, find the digit a .
3. At a Maths Enrichment Club of 35 students, it was found that 21 play the piano, 10 play the violin, and 18 play the recorder. Everyone plays at least one instrument and it is known that 7 people play only the violin. Ann, Bill and Cathy play all three instruments. How many people only play the piano?
4. Suppose we expand $(3 + 2x + x^2)^{1998}$ to obtain $a_0 + a_1x + a_2x^2 + \dots$.
 - (a) Find a_0 and a_1 .
 - (b) Find $a_0 + a_1 + \dots$
 - (c) Find $a_0 - a_1 + a_2 - a_3 + \dots$
5. Suppose that a triangle has sides $a; b; c$ such that $a + b + c = 2$.
 - (a)