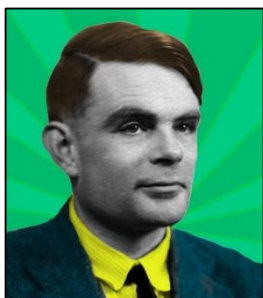




4 distinct items can be ordered in 24 different ways

### News

So you've all seen the film *The Imitation Game* and you all know a bit about codebreaking, and you all know that the annual codebreaking competition run by Southampton University started last Thursday. So far, we're doing OK. Our team captain got the solutions to round one submitted early on Thursday evening, which is as good a start as we could have hoped for. We will, however, need your help as the competition gets more difficult. We've put the codes for round one on the back of this newsletter. If you manage to successfully decode the messages, bring them to the maths office and we'll give you some house points. We'll also make sure you're one of the first people we ask for help when the codes get more difficult.



### Maths Puzzle

A popular maths game is called 'The 24 Game'. This is where you get given four numbers and you have to use them to make the number 24. You must use all four numbers, but you can only use them once each. You can add, subtract, multiply or divide, and use as many brackets as you like.<sup>2</sup> For example, to make the 24 using only the numbers 4, 7, 8, and 8 you could do  $(7 - (8 \div 8)) \times 4 = 24$ . This game is said to have been popular in Shanghai during the 1960s. If you want something to do, and you don't like codebreaking, why not try to make 24 using only the numbers 1, 3, 4 and 6. This one is trickier than it looks, but has a really neat answer. As usual, bring your solutions to the maths office and we'll give you house points ☺

### More News

You may remember back in June we told you about the girls who had won prizes in this year's Southampton University Maths Challenge<sup>1</sup>. What Southampton University forgot to tell us was that we'd also won 1<sup>st</sup> prize in the senior category, so congratulations to Kujani Wanniarachchi in 10X for doing this.

### Maths Club

Don't forget, Maths Club for years 7, 8 and 9 is on Tuesdays in Room 14 at 1 o'clock. Why not go along and join in?

### Joke



1. You probably don't remember. It was a while ago. We won 1<sup>st</sup> and 3<sup>rd</sup> prize in the junior category and 2<sup>nd</sup> prize in the senior category.  
 2. It's very similar to Countdown, except you have to use all four numbers, and you always have to make 24.

## Southampton University Cipher Challenge

Here are the first two codes from this year's cipher challenge. See if you can break them. The first code is a Caesar cipher. Look for common words and guess what they might be. Also look at what kind of document it appears to be. This can often give you a clue to what some of the words are. We have left gaps between the lines so that you can write your solution there.

### A PERSONAL TRAGEDY

PIZZG,

Q PIDM AKIVVML BPM MVKZGXBML VWBM BPM XWTQKM NWCVL WV RIUMTQI'A  
LMAS IVL IBBIKPML QB NWZ GWC BW TWWS IB. BPM XWTQKM LMKZGXBML QB NWZ  
BPMUAMTDMA (QB QA DMZG ABZIQOPBNWZEIZL WVKM GWC ZMITQAM BPIB QB PIA  
JMMV EZQBBMV JIKSEIZLA - QB RCAB CAMA I KIMAIZ APQNB KQXPMZ). BPM  
WNNQKMZ QV KPIZOM WN BPM QVDMABQOIBQWV UILM QB KTMIZ BW UM BPIB PM  
BPQVSA BPQA XZWDMA RIUMTQI'A LMIBP QA "RCAB" I XMZAWVIT BZIOMLG.  
KIZMTMAA CAM WN BPM EWZL "RCAB" MDMV QN PM QA ZQOPB, JCB Q LWV'B BPQVS  
PM QA.  
BPIVSA,  
KPIZTQM

This second code is a bit more difficult, but instructions on how to solve it are contained in the decoded version of the first code.

### JAMELIA'S LAST TESTAMENT

E TOY'P ZEPGLST OY PZED LSET YZTE. AZYLP GLSEYZOTZD HZ YPCP, SPYZW  
LELSEZOYLN TH ZSPPE. YLN TE TIT QZEO, PEC L EDP'G LSES RTX, PHC PSEP RZ EEF  
MJE WT FRSE ZMPC LPHOY. L RYT'Y PAALS DLH ELSH ZEOY TW, MS EZMP CPHP HPXYL  
SE PCZX XTS PXLWMEYLN TPY ZW LSE THWL POZERT, MZZ EDTDTSEO YL XTISOY  
TQEY LNTYOYLP YZ RDL SP. S EFM'O PPC RLP H RYT SE JCPG PCPEQ, LOTL, DPH. RY T  
SEJ'C PGPC PE QLELSE. PV TWE QP WPS. P GPTW PM EYL NT.

We hope you have fun solving these. Look out for the next codes, which will be put on the window sill outside the maths office every Friday morning.