

Weekly Challenge #1

Welcome to the Count on Us Secondary Challenge's first weekly *School's Out* challenge! We will set an activity every week using elements from the rounds of the challenge. This one uses algebra and coding, the final round. First make sure you know all about coding and decoding with a Caesar Cipher. Don't use online tools for decoding you cannot do this in the challenge!

Welcome to the Algebra/Coding Round Institutions.

Use the solution of each equation as the offset to decode the following message. Then answer the question in each case. You are welcome to look things up to find the answers.

1. $8x - 53 = 5x - 32$

PU DOPJO SVUKVU IVYVBNO PZ ZA. AOVTHZ'Z OVZWPAHS?

2. $2^x - 3 = 13$

ALMGL FIPKMER GMXC KIXW XVEMRW JVSQ WX. TERGVEW?

3. $x^2 - 20x + 120 = 2x - 1$

HSLE TD ZY ESP ZAAZDTEP DTOP ZQ ESP ESLXPD QCZX NTEJ SLWW?

4. $\frac{70}{2x-1} = 2$

OZSL TMKAFWKK AK DDGQV'K GX DGFVGF AFNGDNWV AF?

5. $1, 1, 2, 3, \dots, \dots, x$

VA JUNG LRNE JNF GUR FPVRAPR ZHFRHZ SBHAQRQ?

6. $13x - 233 = 2x - 2$

RCVO DN OCZ APGG, GZBVG IVHZ JA DHKZMDVG XJGGZBZ GJIYJI?

HELP US SPREAD THE WORD...

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