

***** **Mathematical Weekly** *****
 (week seven)

Number Sense

Easy: Find 3 numbers, A,B,C, from {1,2,3,4,5,6,7,8,9} such that

$$\begin{array}{r} A B C \\ - C B A \\ \hline = C A B \end{array}$$

Try it! It's very easy. You'll find many solutions.

Harder: Find 4 numbers, A,B,C,D, from {1,2,3,4,5,6,7,8,9} such that

$$\begin{array}{r} A B C D \\ - D C B A \\ \hline = B D A C \end{array}$$

Try the magic number 6174 (see week-one edition) or its permutation.

Solutions are certainly not unique:

$$\begin{array}{l} 9108 - 8019 = 1089 \\ 5823 - 3285 = 2538 \\ 3870 - 0783 = 3087 \\ 2961 - 1692 = 1269 \\ 1980 - 0891 = 1089 \end{array}$$

Even Harder:

$$\begin{array}{r} 987654321 \quad 9876543210 \\ - 123456789 \quad - 0123456789 \\ \hline 864197532 \quad 9753086421 \end{array}$$