Problem of the Week
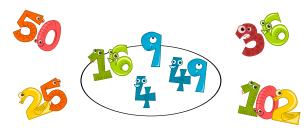## Problem B
Don't Be Square...Give Me a High Five!

a) These numbers belong in a group: 25, 40, 115, 55.
   These numbers do not belong in this group: 33, 71, 4, 106.

   (i) Which of these numbers belong in this group: 75, 205, 87, 43?

   (ii) What is the rule which describes numbers in this group?

b) These numbers belong in another group: 42,18,108,462.
   These numbers do not belong in this group: 21, 46, 99, 104.

   (i) Which of these numbers belong in this group: 63, 84, 118, 456?

   (ii) What is the rule which describes numbers in this group?

c) In simple codes, a number is assigned to each letter of the alphabet by a rule known to the decoder. For example, suppose the rule is to multiply the letter's order in the alphabet by 5. Then the first three words of the title of this problem, encoded according to this rule, would give

   207570100 1025 958510559025 for "Don't Be Square".

   Decode the following sentence, which was encoded according to the same rule:

   1154510040 6551004095 12575105 15570 2075 57012510040457035

d) Make up your own coding rules, and use them to code the title of this problem. Trade rules with a classmate and decode each other's result as a check.