



Problem of the Week

Problem B and Solution

One of These is Not Like the Others...

Problem

- a) For each of the following sets, decide which number doesn't belong and should be kicked off the island. Give reasons for your decision.
- b) Can you also find something that is common to each of the numbers on each island and hence justify why they all should stay?

i)



ii)



EXTENSION: See <http://wodb.ca> for other samples of challenges to try.

Solution

- a) Note that many correct answers are possible in both cases.
- i) Some possible choices and reasons are:
- 4, because it is a single digit;
 - 16, because its tens digit is a 1;
 - 25, because it is odd;
 - 36, because its tens digit is half its ones digit.
 - 64, because the sum of its digit is a two-digit number.
- ii) Some possible choices and reasons are:
- 37, because it is a prime number;
 - 44, because the sum of its digits is 8 while the others sum to 10;
 - 55, because it is the only multiple of 5;
 - 82, because its tens digit is four times its ones digit.
- b) Note there are many possible answers for both cases. For example,
- i) All of the numbers on the first island can be written as the product of two factors that are the same, $4 = 2 \times 2$; $16 = 4 \times 4$; $25 = 5 \times 5$; $36 = 6 \times 6$; $64 = 8 \times 8$.
- ii) All of the numbers on the second island are two-digit numbers.

