

MATHEMATICS ENRICHMENT CLUB.<sup>1</sup>  
Problem Sheet 9, July 26, 2012

1. How many ways can we change \$1.00 into coins of 5,10,20 and/or 50 cents?

*a:* 46    *b:* 47    *c:* 48    *d:* 49    *e:* 50:

2. (a) What number is one less than 11010000 in base 3?

(b) What is the decimal representation of  $220200_3$  ?

3. If we expand  $(2 + x)^{18}$  as a polynomial we obtain

$$(2 + x)^{18} = a_0 + a_1x + a_2x^2$$