2.7   Logic operations

Strictly speaking, logic operations are not 'numeracy', but this question is included here for convenience. It relates to Section 15 of Block 1 and to Activity 46.

Don't feel you need to try all the parts of the question; just do as many as you need to gain confidence, both as you study Block 1 and when you come to revise for the exam.

Question 10

For each of (a)–(e) below, find:

(i)   NOT A

(ii) NOT B

(iii) A AND B

(iv) A OR B

(v)   A XOR B

(a)   A = 0111 1010 B = 0110 0001

(b)   A = 1111 0000 B = 0001 0110

(c)   A = 0010 0111 B = 1001 1001

(d)   A = 0001 1101 B = 1001 1100

(e)   A = 1001 1111 B = 1001 1111

Question 10

   (a) (i)   NOT A is 1000 0101
       (ii)   NOT B is 1001 1110
       (iii)   A AND B is 0110 0000
       (iv)   A OR B is 0111 1011
       (v)   A XOR B is 0001 1011

   (b) (i)   NOT A is 0000 1111
       (ii)   NOT B is 1110 1001
       (iii)   A AND B is 0001 0000
       (iv)   A OR B is 1111 0110
       (v)   A XOR B is 1110 0110

   (c) (i)   NOT A is 1101 1000
       (ii)   NOT B is 0110 0110
       (iii)   A AND B is 0000 0001
       (iv)   A OR B is 1011 1111
       (v)   A XOR B is 1011 1110

   (d) (i)   NOT A is 1110 0010
       (ii)   NOT B is 0110 0011
       (iii)   A AND B is 0001 1100
       (iv)   A OR B is 1001 1101
       (v)   A XOR B is 1000 0001

   (e) (i)   NOT A is 0110 0000
       (ii)   NOT B is 0110 0000
       (iii)   A AND B is 1001 1111
       (iv)   A OR B is 1001 1111
       (v)   A XOR B is 0000 0000