



Answers to Chapter 1 questions

Activity 1.1

- a 51
- b 127
- c 153
- d 116
- e 255
- f 15
- g 143
- h 240
- i 112
- j 239

Activity 1.2

- a 0 0 1 0 1 0 0 1
- b 0 1 0 0 0 0 1 1
- c 0 1 0 1 0 1 1 0
- d 0 1 1 0 0 1 0 0
- e 0 1 1 0 1 1 1 1
- f 0 1 1 1 1 1 1 1
- g 1 0 0 1 0 0 0 0
- h 1 0 1 1 1 1 0 1
- i 1 1 0 0 1 0 0 0
- j 1 1 1 1 1 1 1 1

Activity 1.3

- a i motor B ON, motor C OFF, B direction is forwards;
overall effect: robot pivoting to the left about wheel C
 - ii motor B ON, motor C ON, B direction backwards, C direction backwards
overall effect: robot moving backwards in a straight line
 - iii motor B ON, motor C ON, B direction backwards, C direction forwards
overall effect: robot is turning to the right
- b 0 1 1 0 0 0 0 1
 - c 1 0 1 0 0 1 1 0
 - d error

Activity 1.4

- a C 3
- b F 7
- c 2 7 F
- d 4 E E
- e 1 E 1
- f 8 9 E
- g (0) 4 F E
- h (0) E 9 C
- i F F 7 D
- j (0) 6 7 A E

Activity 1.5

- a 0 1 1 0 1 1 0 0
- b 0 1 0 1 1 0 0 1
- c 1 0 1 0 1 0 1 0
- d 1 0 1 0 0 0 0 0 0 0 0 0
- e 0 1 0 0 0 0 0 0 1 1 1 0
- f 1 0 1 1 1 0 1 0 0 1 1 0
- g 1 0 0 1 1 1 0 0 1 1 0 0
- h 0 1 0 0 0 0 0 0 1 0 1 0 1 0 1 0
- i 1 1 0 1 1 0 1 0 0 1 0 0 0 1 1 1
- j 0 0 0 1 1 0 1 0 1 0 1 1 0 0 0 0

Activity 1.6

- a 1 0 7
- b 1 5 6
- c 7 4
- d 2 5 5
- e 5 1 1
- f 2 5 6 1
- g 2 9 9 6
- h 3 2 4 0
- i 4 7 8 2
- j 4 4 4 2 5

Activity 1.7

- a 6 2
- b E 3
- c 1 E A
- d 1 F F
- e 3 3 A
- f 3 E 8
- g A 4 A
- h E 9 F
- i F A 7
- j 1 3 8 8

Activity 1.9

- a www.cie.org.uk
%77%77%77%2E%63%69%65%2E%6F%72%67%2E%75%6B
- b www.cie.org.uk/computer_science
%77%77%77%2E%63%69%65%2E%6F%72%67%2E%75%6B%2F%63%6F%6D%70%75%74%65%72%5F%73%63%69%%65%6E%63%65
- c <https://www.hodder.co.uk>
%68%74%74%70%73%3A%2F%2F%77%77%77%2E%68%6F%64%64%65%72%2E%63%6F%2E%75%6B
- d www.HodderEducation.co.uk
%77%77%77%2E%48%6F%64%64%65%72%45%64%75%63%61%74%69%6F%6E%2E%63%6F%2E%75%6B
- e <http://www.ucles.ac.uk/computing.htm>
%68%74%74%70%3A%2F%2F%77%77%77%2E%75%63%6C%65%73%2E%61%63%2E%75%6B%2F%63%6F%6D%70%75%74%69%6E%67%2E%68%74%6D