Cutland Computability Exercises

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1 Chapter 3 Exercises

Exercise 1.1 (4.6.1)**.**

$$\left\lfloor \frac{x+1}{2} \right\rfloor$$

We are turning every other one to a zero.

Exercise 1.2 (4.6.2)**.**

$$q_1, 1, 0, q_2$$
$$q_1, 0, R, q_1$$
$$q_1, B, L, q_4$$
$$q_2, B, 1, q_3$$
$$q_2, 1, L, q_2$$
$$q_2, 0, L, q_2$$
$$q_3, 1, R, q_3$$
$$q_3, 0, R, q_1$$
$$q_4, 0, 1, q_5$$
$$q_5, 1, L, q_4$$

Essentially this algorithm changes a one to a zero, moves to the left, copies the one down, moves back to the right to change each one to a zero. At the end it replaces all the zeros with ones