

Sample Solutions to Quiz #2

1. The estimation results are shown in Figure 1:

$$\begin{aligned}
 p &= 8 + 6 = 14 \text{ (Figure 1(a)),} \\
 q &= 2 + 8 + 5 = 15 \text{ (Figure 1(b)),} \\
 r &= 2 + 4 + 7 + 1 = 14 \text{ (Figure 1(c)),}
 \end{aligned}$$

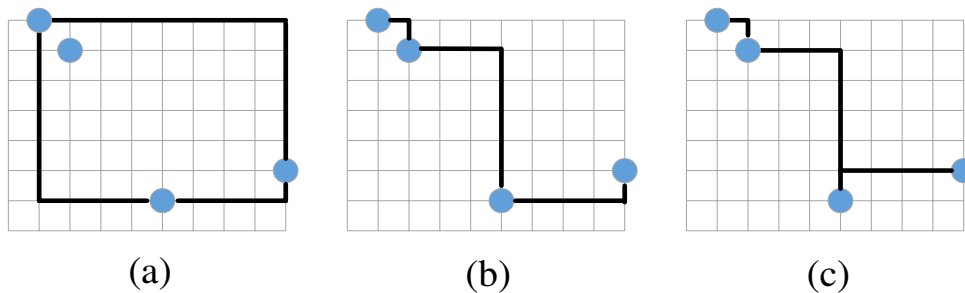


Figure 1: Wirelength estimation for different methods.

2. See Figure 2.

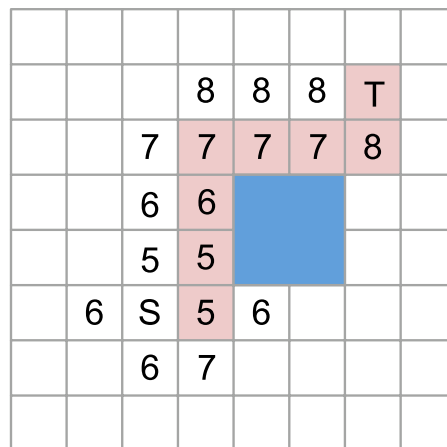


Figure 2: A*-search routing for problem 2.

$$3. x = \frac{1 \times 1 + 2 \times 6 + 3 \times 3 + 4 \times 8}{1 + 2 + 3 + 4} = \frac{54}{10} = 5.4 \cong 5$$

$$y = \frac{1 \times 9 + 2 \times 2 + 3 \times 5 + 4 \times 4}{1 + 2 + 3 + 4} = \frac{44}{10} = 4.4 \cong 4$$

Therefore, the position of i is (5,4).