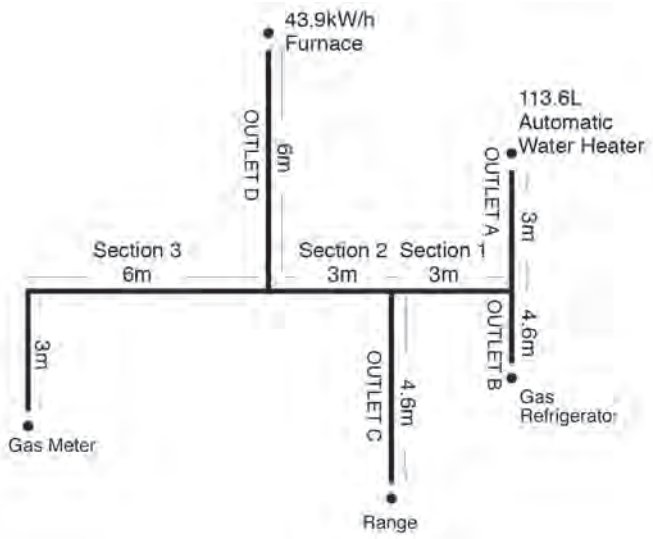
Figure 12-2 Example Illustrating Use of Tables 12-1 and 12-7

Problem: Determine the required pipe size of each section and outlet of the piping system shown in Figure 12-2. Gas to be used has a specific gravity of 0.6 and 11.4kW/m^3 , delivered at 20cm water column pressure.



Solution:

(1) Maximum gas demand of outlet A —
10.3kW/h (from Table 12-1).
Maximum gas demand of outlet B —
0.9kW/h (from Table 12-1).
Maximum gas demand of outlet C —
19kW/h (from Table 12-1).
Maximum gas demand of outlet D —
43.9kW/h divided by 11.4kW/m^3 = 3.8m^3/h

(2) The length of pipe from the gas meter to the most remote outlet (outlet A) is 18m.

(3) Using the length in feet column row marked 18m in Table 12-7:
Outlet A, supplying 10.3kW/h, requires 15mm pipe. Section 1, supplying outlets A and B, or 11.2kW/h requires 15mm pipe.
Section 2, supplying outlets A, B, and C, or 30.2kW/h requires 20mm pipe.
Section 3, supplying outlets A, B, C, and D, or 74.1kW/h, requires 25mm pipe.

(4) Using the column marked 20m in Table 12-7:
Outlet B supplying 0.08m^3/h, requires 15mm pipe.
Outlet C, supplying 1.67m^3/h, requires 15mm pipe.

(5) Using the column marked 15m in Table 12-7:
Outlet D, supplying 3.85m^3/h, requires 20mm pipe.

SI: 1cm = 0.4 in.; 1m = 3.3 ft.; 1mm = 0.04 in.; 1m^3 = 33.3 ft.^{3}; 1kW = 3.4 Btu/h ; 1L = 0.26 gal.