Problem of the Week
Problem B and Solution
Fishing for Thermoclines

Problem

Paige is headed to Lac Nilgault to do some fishing for lake trout and pike. She knows that small pike generally like 18°C water, large pike like 12°C water, and lake trout like 10°C water. She measures the water temperature in the lake at different depths, and collects the following data.

Depth m	Temp °C	Depth m	Temp °C
0.5	20	5	15
1	19	5.5	15
1.5	18	6	15
2	18	6.5	12
2.5	18	7	11
3	17	7.5	10
3.5	17	8	10
4	16	8.5	10
4.5	16	9	9

Plot points to make a broken-line graph to illustrate this data.

a) At what depths should Paige be fishing for small pike?

b) At what depths should Paige be fishing for lake trout?

c) Paige knows that most lakes have a thermocline where the water will rapidly change temperature. At what depth is the top of the thermocline in Lac Nilgault?

Solution

a) According to the data, Paige should fish for small pike at a depth between 1.5 m and 2.5 m.

b) She should fish for lake trout at a depth between 7.5 m and 8.5 m.

c) We can see from the graph that the temperature starts to quickly drop at a depth of about 6 m. Therefore, the top of the thermocline is at a depth of about 6 m.

Temperature vs. Depth of Water