Problem of the Week
Problem A and Solution
Gym Schedules

Problem

At Spruce Glen Public School, each day is divided into nine blocks, which are each 30 minutes long. There are six classrooms that share the gym, according to the weekly schedule shown.

	Monday	Tuesday	Wednesday	Thursday	Friday
Block A	Room 1	Room 3	Room 2	Room 3	Room 6
Block B	Room 5	Room 5	Room 2	Room 3	Room 1
Block C	Room 3	Room 5	Room 2	Room 2	Room 3
Block D	Room 3	Room 5	Room 5	Room 2	Room 3
Block E	Room 6	Room 1	Room 5	Room 6	Room 3
Block F	Room 4	Room 2	Room 6	Room 1	Room 5
Block G	Room 4	Room 6	Room 1	Room 1	Room 2
Block H	Room 2	Room 4	Room 3	Room 4	Room 2
Block I	Room 2	Room 4	Room 4	Room 5	Room 4

(a) Make a bar chart showing the total gym time per week for each room.

(b) List the rooms in order from least to greatest total gym time per week.

Solution

(a) One way to draw the bar chart is to calculate the total gym time for each room. Then we can use the total times to determine the height of each bar. Remember that each block is 30 minutes long.

For example, if we add up the gym times for Room 1 in minutes we get:

- Monday time: 30 minutes

- Tuesday time: 30 minutes

- Wednesday time: 30 minutes

- Thursday time: $30 + 30 = 60$ minutes

- Friday time: 30 minutes

Total time for Room 1 is $30 + 30 + 30 + 60 + 30 = 180$ minutes

We could do these calculations for each room to get:

Total time for Room 2 is $60 + 30 + 90 + 60 + 60 = 300$ minutes
Total time for Room 3 is $60 + 30 + 30 + 60 + 90 = 270$ minutes
Total time for Room 4 is $60 + 60 + 30 + 30 + 30 = 210$ minutes
Total time for Room 5 is $30 + 90 + 60 + 30 + 30 = 240$ minutes
Total time for Room 6 is $30 + 30 + 30 + 30 + 30 = 150$ minutes

Another way to build the bar chart is to count the total number of blocks that each class is in the gym. We can keep track of the number of blocks by using a tally chart.

Room	Number of Blocks
1	卌 |
2	卌 卌
3	卌 ||||
4	卌 ||
5	卌 |||
6	卌

Then we can set our vertical axis to go up by 30 minute increments so that each tick mark in the bar chart represents one block in the gym.

The completed bar chart is shown.
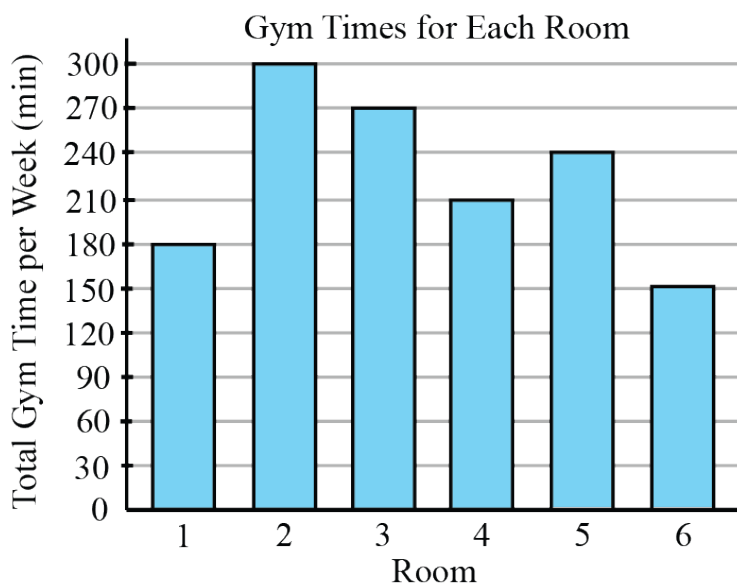
(b) Looking at the size of the bars in the chart, the rooms in order from least to greatest total gym time per week is:

Room 6, Room 1, Room 4, Room 5, Room 3, Room 2