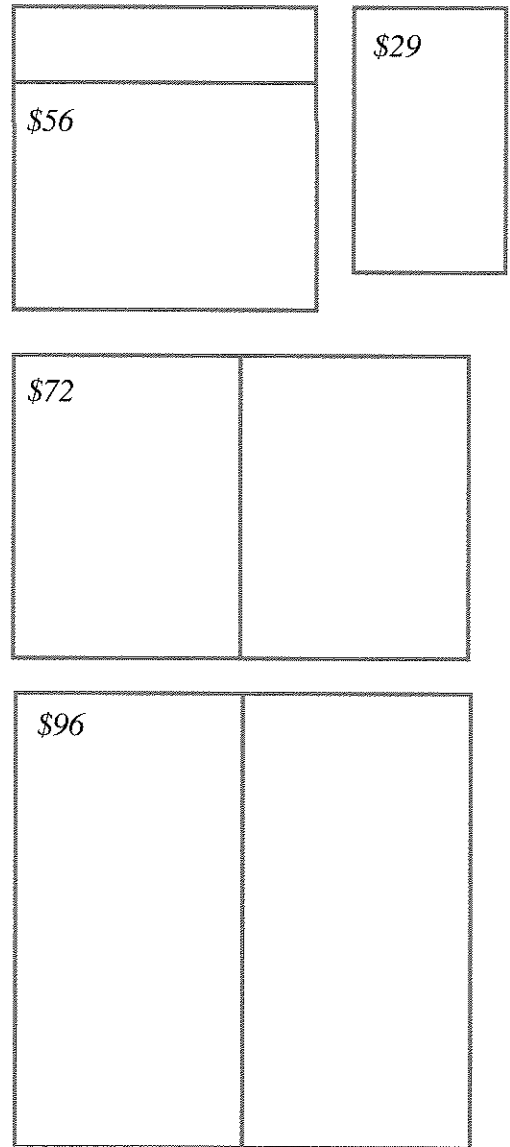
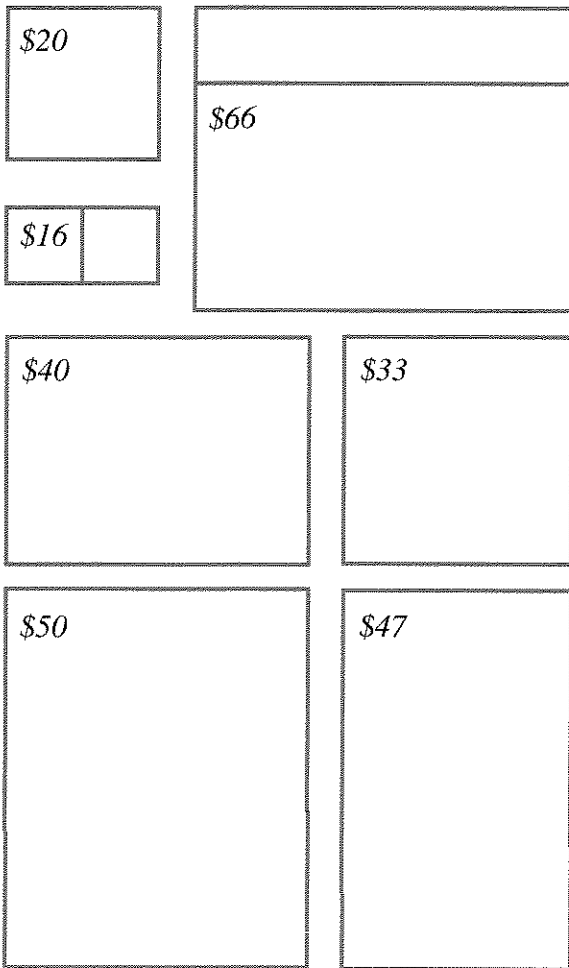


Window-Shopping

On weekends, Lara works at the A.B. GLARE window store. One day a customer, Mr. Alvin Cutterball, asked for an explanation of how the prices were chosen. Lara did not know. Later she asked her supervisor. The supervisor looked very busy and told her not to worry about it. Lara concluded that he probably didn't know and decided she would figure it out herself.



The figures show some of the windows. They are scale drawings, with one centimeter representing one foot.

1. **Exploration** The price of almost all the windows was calculated by following the same principle. Figure out how it was done.

Important hints:

- Work with other students.
- Think about what numbers might affect pricing. (Some possibilities: length, width, area of glass, perimeter of window, number of panes, etc....)
- Keep an organized record of the numbers you come across in your exploration.
- Keep a record of ideas you try, even if they end up not working.

2. One window is on sale and priced below what the system would indicate. Which one is it? How much does it cost when not on sale?

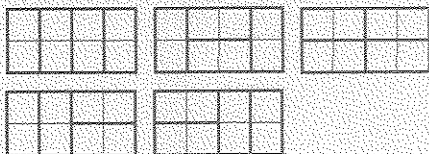
3. Draw scale models of windows that would cost the amounts below. Explain how you got your answers.

a. \$32 b. \$84

4. **Report** Summarize your solutions to problems 1, 2, and 3 by writing an explanation of how window prices are calculated. Make it so clear that even Lara's supervisor could understand it. Explain how you figured out the pricing system, showing tables, lists, calculations, diagrams, or anything else that helped you solve the problem.

DISCOVERY A DOMINO PROBLEM

The figure shows all the ways to cover a two-by-four strip with dominoes.



5. Find out how many ways there are to cover a two-by-five strip with dominoes. Sketch each way, making sure that you do not show the same way more than once.
6. Make a table like this one about strips of width 2, extending it to length 8. Note that there is only one way to cover a strip of length zero, and that is not to cover it!

Length of strip	Number of ways to cover it with dominoes
0	1
1	1
2	...
3	...
4	5
5	...

7. Look for the pattern in the numbers in the second column. Use the pattern to extend the table to length 10.