

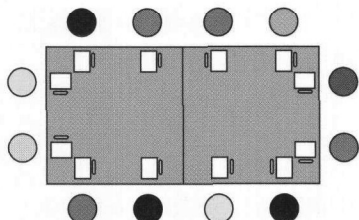
4.50 - Questions Handout #s 4, 6 & 8 - 13

Check Your Understanding

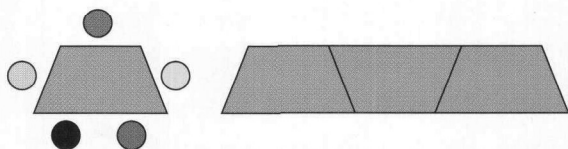
Practise

For help with questions 4 and 5, refer to Example 1.

4. Square tables are arranged in rows for a parent-night presentation. Each side of a square table seats two people.



- Draw a diagram to show how many people can sit at a row of four tables.
 - Describe a pattern for the number of people sitting at a row of n tables.
 - Use an equation to model your pattern.
5. James is helping grade 5 students arrange tables for reading groups. The school has trapezoid tables, which seat five people.



- Describe a pattern relating the number of students that can sit at a row of n tables.
- Use a table to organize your pattern.
- Write a formula to model your pattern.
- Use your formula to find how many students can sit at a row of seven tables.
- Describe one way to check your answer. Check your answer. If it is not correct, revise your formula.

For help with questions 6 and 7, refer to Example 2.

6. You are planning a badminton tournament. A player who wins a match plays against another winner in the next round. A player who loses a match is eliminated.
- How many badminton players can enter a tournament that takes four rounds to find the overall winner?
 - How many players can enter a tournament that takes n rounds?
7. Sari organizes a spelling competition. There are five rounds. At each round, half the students are eliminated. The final round has three competitors.
- Organize the data using a tree diagram or a table.
 - How many students can enter the spelling competition?

Apply

8. Study the exposed smiley face cubes.

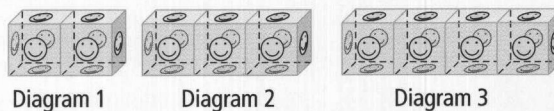
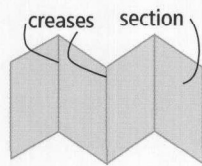


Diagram 1 Diagram 2 Diagram 3

- Develop a formula to model the pattern.
 - What method did you use to find your formula? Justify your method.
9. A pattern is made of centimetre squares.
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- By how much does the perimeter of the shape increase with each new L-shape?
 - Describe the relationship between the perimeter of the shape and the number of L-shapes.
 - Find the perimeter of a shape that uses 12 L-shapes.

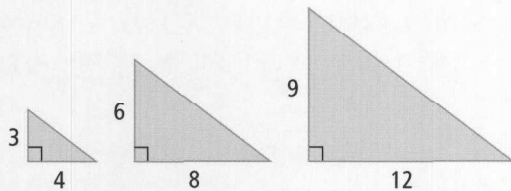
Chapter Problem

- 10.** Start to fold a piece of paper into a fan. After each fold, open the paper and record the number of creases and sections.



- How is the number of sections related to the number of creases?
- Develop an equation to model the relationship.
- What do your variables represent?
- Justify the method you used for your investigation.
- If your fan has 16 sections, how many creases will it have? Explain.

- 11. a)** Find the length of the hypotenuse of each right triangle.



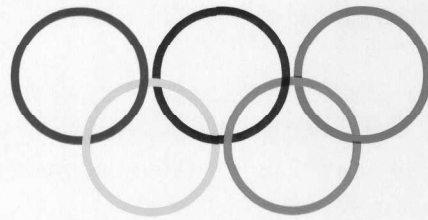
- How are the triangles related? Identify the pattern and extend it to show one more triangle.
- Create a similar pattern beginning with this triangle. Show the next two triangles.



- 12.** Fernanda read about a cool Web site in her science book. She e-mails three friends to tell them about the site. Each of her friends e-mails three other friends and so on. How many levels of e-mails are needed to tell 1000 people?



- 13.** Look at the Olympic symbol.



- Describe the relationship between the number of circles and the number of intersection points. How can the pattern be extended?
- If the pattern is extended to a total of 100 circles, how many points of intersection will there be?
- Create your own patterning problem. Ask a classmate to model your pattern using an equation.

Extend

- 14.** Dr. Fournier wants to hire a student to walk dogs for her veterinary clinic. Two students apply for the job. Chandra charges \$5 per dog. Sylvie charges \$10 for the first dog and \$3 for each additional dog.



- How much does each student charge to walk one dog? two dogs?
- Who should Dr. Fournier hire to walk the dogs? Why? Will Dr. Fournier change her mind depending on the number of dogs at the clinic? Explain.