

What's the Angle?

All shapes with straight lines have **angles** where the lines meet. The Geometrics Stage Crew is using ladders to hang lights high up on some walls. When a ladder leans against a wall, it forms a type of right triangle. The angle where the wall meets the ground is a **right angle** of 90° . Then there are two more angles: one where the ladder meets the floor called the **floor angle**, and one where the ladder meets the wall called the **wall angle**.



The Geometrics Stage Crew is using a ladder that has very specific instructions regarding angles and safety.

The instructions say that on a wood floor the maximum safe floor angle is 80° , and the minimum safe floor angle is 68° . On carpet, the maximum safe floor angle is 85° and the minimum is 30° .

- 1** What is the maximum safe wall angle on a wood floor?
- 2** What is the minimum safe wall angle on a wood floor?
- 3** What is the maximum safe wall angle on carpet?
- 4** What is the minimum safe wall angle on carpet?
- 5** The Geometrics Stage Crew is also using ladders to hang triangular pennants on the wall. The pennants feature The Geometrics name and logo, and each one has a base of 8 feet and a height of 14 feet. What is the area of each pennant?