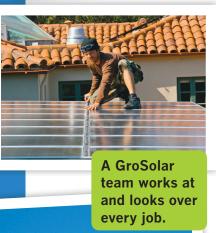


THE POWER OF ALREINA



Ted Petsas calculates area to help the environment!

n Earth Day, we talk a lot about how we can protect our planet. Ted Petsas does that for his job! He is a system engineer at GroSolar. Ted designs solar electric systems to power buildings. These systems use solar panels to create electricity from sunlight instead of from non-renewable resources (resources that will eventually run out).

When Ted was in college, he entered a contest to design and build an environmentally friendly house. "I was passionate about

environmental issues before that," Ted told *DynaMath*. "This was a chance to learn a lot about what actually goes into building a house that can be environmentally friendly and powered only by the sun."

Now, when Ted gets a project for his job, he goes to the building he'll be working on and finds its roof's **area**—the amount of space inside a closed region. Then, he figures out how many solar panels can fit on the roof. Work with area to see how Ted helps the environment, one roof at a time.



What to Do

Read Area of a Rectangle below. Then answer the questions.

Area of a Rectangle

- Area of a rectangle (A)
 = length (I) × width (w)
- ✓ Area is measured in square units.
 Example: What is the area of this rectangle?
 5 feet

feet

AREA

- \checkmark Multiply: 5 feet \times 4 feet = 20 square feet
- ✓ The rectangle's area is 20 square feet.
- Say Ted is designing a solar-power system that will be built on a rectangular roof that is 24 feet (ft) long by 50 ft wide.
- A. Write a multiplication problem that you would use to find the area of the roof:
- **B.** What is the area of the roof?
- Say Ted needs to calculate how many 3-by-5-ft solar panels will fit on a 27-by-45-ft roof.
- A. What is the area of the roof?
- **B.** What is the area of one panel?
- **c.** Divide the roof's area by one panel's area to see how many panels will fit:

- An apartment building has a rectangular roof that is 60 by 72 ft.

 A. What is the area of the roof?
- **B.** How many 3-by-5-ft solar panels will fit on the roof?
- **c.** Ted decides to use 2-by-4-ft solar panels instead. How many will fit?
- Say Ted is putting panels on a school's cafeteria and gym. The cafeteria's roof is 60 by 66 ft. The gym's roof is 42 by 75 ft. How many 3-by-5-ft panels will fit on both roofs combined?
- An office building has a roof that is 36 by 54 ft. Which size panels (3-by-5 ft or 2-by-4 ft) will fit evenly on the roof, and how many will fit?



Say Ted builds a solar-panel system for a roof that is 30 by 55 ft. Each 3-by-5-ft panel produces 170 watts of electricity. How many watts of electricity will the whole roof produce?

Web Wise

For tips on how to save electricity, gas, and water, visit www.scholastic.com/dynamath.

-By Linda Buchwald