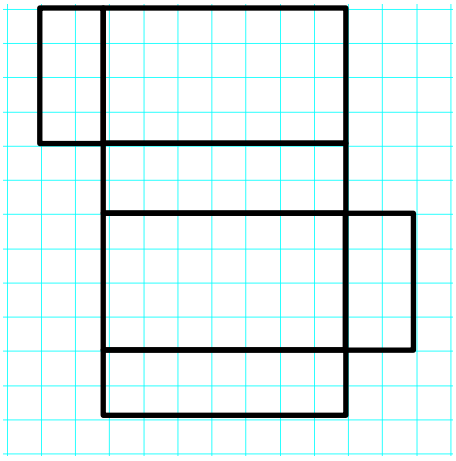
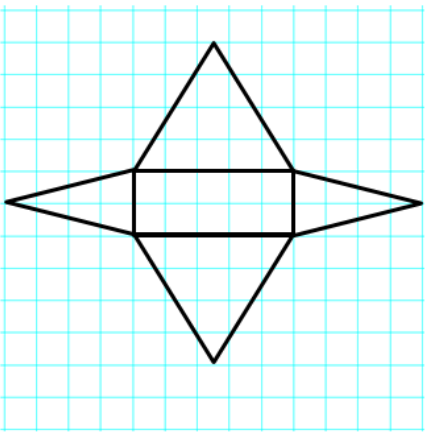
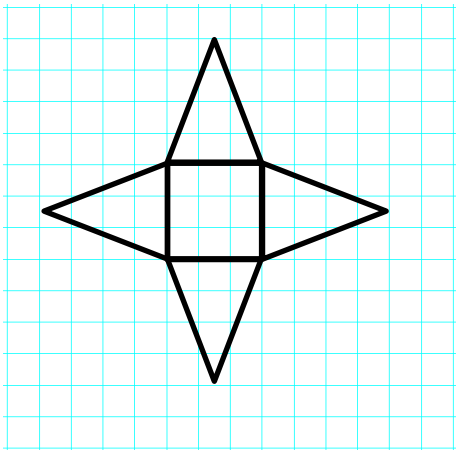
Problem Set

Name the shape, and write an expression for surface area. Calculate the surface area of the figure. Assume each box on the grid paper represents a 1 ft. $\times$ 1 ft. square.

1. 

2. 

Explain the error in each problem below. Assume each box on the grid paper represents a 1 m $\times$ 1 m square.

3. 

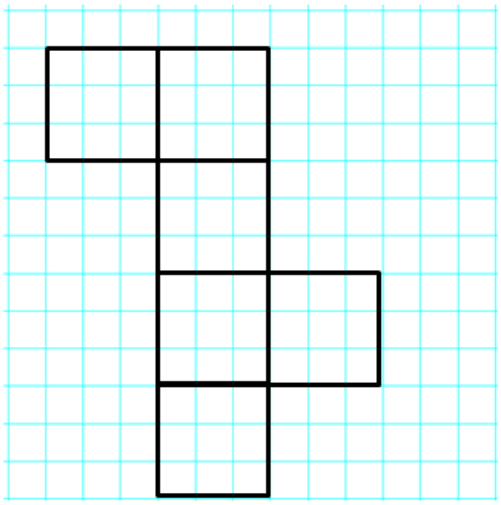
Name of Shape: Rectangular Pyramid, but more specifically a Square Pyramid

Area of Base: $3 \text{ m} \times 3 \text{ m} = 9 \text{ m}^2$

Area of Triangles: $3 \text{ m} \times 4 \text{ m} = 12 \text{ m}^2$

Surface Area: $9 \text{ m}^2 + 12 \text{ m}^2 + 12 \text{ m}^2 + 12 \text{ m}^2 + 12 \text{ m}^2 = 57 \text{ m}^2$

4.



Name of Shape: Rectangular Prism or, more specifically, a Cube

Area of Faces: $3\text{ m} \times 3\text{ m} = 9\text{ m}^2$

Surface Area: $9\text{ m}^2 + 9\text{ m}^2 + 9\text{ m}^2 + 9\text{ m}^2 + 9\text{ m}^2 = 45\text{ m}^2$

5. Sofia and Ella are both writing expressions to calculate the surface area of a rectangular prism. However, they wrote different expressions.

   a. Examine the expressions below, and determine if they represent the same value. Explain why or why not.

Sofia's Expression:

$$(3\text{ cm} \times 4\text{ cm}) + (3\text{ cm} \times 4\text{ cm}) + (3\text{ cm} \times 5\text{ cm}) + (3\text{ cm} \times 5\text{ cm}) + (4\text{ cm} \times 5\text{ cm}) + (4\text{ cm} \times 5\text{ cm})$$

Ella's Expression:

$$2(3\text{ cm} \times 4\text{ cm}) + 2(3\text{ cm} \times 5\text{ cm}) + 2(4\text{ cm} \times 5\text{ cm})$$

   b. What fact about the surface area of a rectangular prism does Ella's expression show more clearly than Sofia's?