**8-7: Describe Cross Sections**

1. Sample answer: For a rectangular prism, the horizontal and vertical cross sections are the same size and shape as the faces that are parallel to the slice. For a rectangular pyramid, the cross sections parallel to the base are the same shape as the base. The cross sections perpendicular to the base through the vertex opposite the base have the same altitude as the pyramid with the same base length as the side of the base that is parallel to the slice.

2. Rectangles

3. The horizontal cross sections are rectangles. The vertical cross sections are isosceles triangles.

4. Rectangle; 5 cm by 8 cm

5. a. Sample drawing:
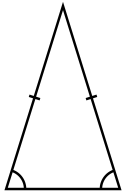
   b. Sample answer: 45 mm^2

6. 4 inches by 2 inches

7. Sample answer: An isosceles triangle with a base length of 8 inches and a height of 12 inches.

8. Sample answer: Rectangle that is 2.5 inches by 3 inches.

9. a. 3 feet by 9 feet

   b. 5 feet by 9 feet

10. a. It is a rectangle that is 6 ft by 11 ft.

    b. No; Sample answer: The length and width of the rectangular prism is the same no matter where you slice it horizontally, as long as the horizontal slice is parallel to the top and bottom of the prism.

11. Sample answer: A rectangle that is smaller than 12 cm by 6 cm. The sides of the cross section would have the same ratio as the sides of the base, where the longer side is twice the length of the shorter side.

12. See students' work.

13. 8 yards

14. a. Sample drawing:
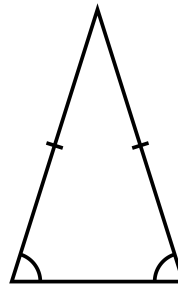
    b. 126 in^2

15. Sample answer: Miranda incorrectly labeled the base of the cross section. It should have been 9 cm.

16. Sample answer: 3; The base of the figure is 6 cm by 8 cm. A vertical cross sections is 6 cm by 3 cm. 3 cm times 2 = 6 cm and 3 cm times 3 = 9 cm. Since 8 cm is closer to 9 cm than to 6 cm, 3 is the closest whole number of vertical cross sections needed. The estimate is higher than the actual number.