



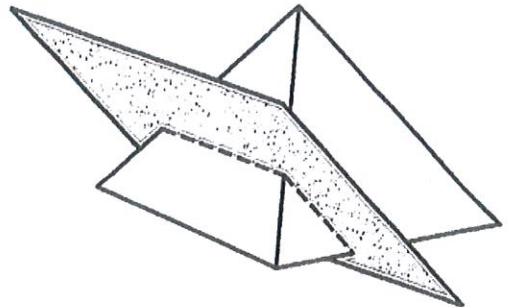

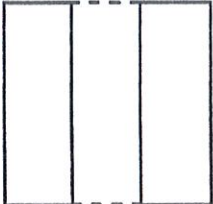
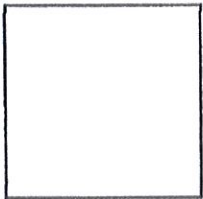
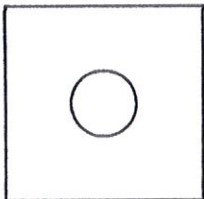


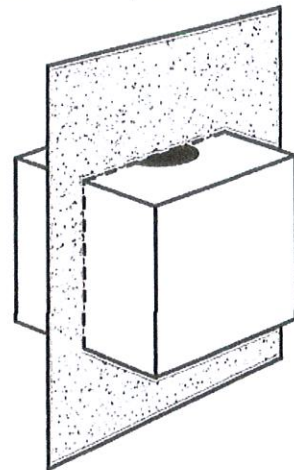
1. A square pyramid is cut along the shaded plane shown below. Which of the following is the cross-section of this solid?

- A. 
- B.** 
- C. 
- D. 

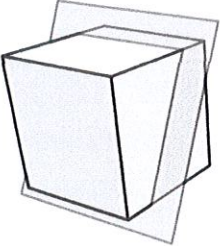

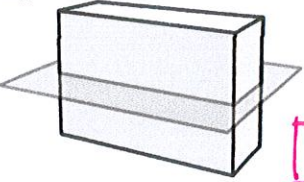

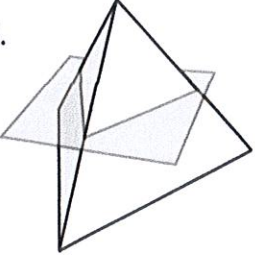
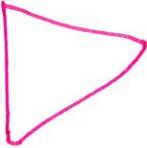
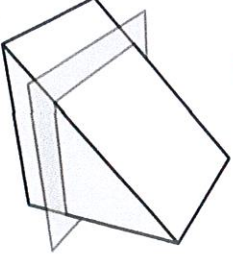

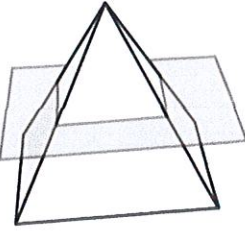
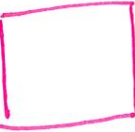
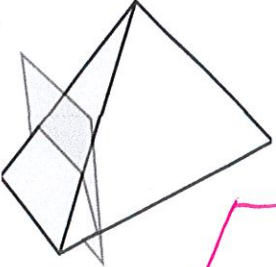
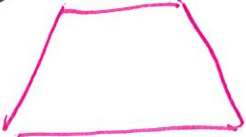


2. A cube with a cylinder cut from its center is cut along the plane shown below. Which of the following is the cross-section of this solid?

- A. 
- B.** 
- C. 
- D. 

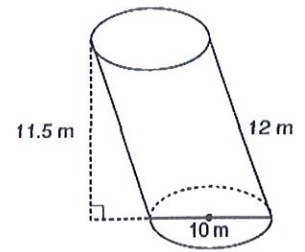
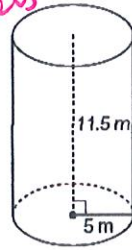


Determine the 2D shape created if the 3D shape were sliced as shown.

- 3.  
- 4.  
- 5.  
- 6.  
- 7.  
- 8.  

9. Sue believes that the two cylinders shown in the diagram below have equal volumes. Is Sue correct? Explain why.

The area of the bases¹ and the heights are the same, so the volumes are the same.



10. Two stacks of 23 quarters each are shown below. One stack forms a cylinder but the other stack does not form a cylinder. Use Cavalieri's principle to explain why the volumes of these two stacks of quarters are equal.

Each quarter in both stacks has the same base area, so each corresponding cross-section of the stacks will have the same area. Since the two stacks both have 23 quarters, the two volumes must be the same. (same height)



11. The diagram below shows two figures. Figure A is a right triangular prism and figure B is an oblique triangular prism. The base of figure A has a height of 5 and a length of 8 and the height of prism A is 14. The base of figure B has a height of 8 and a length of 5 and the height of prism B is 14. Use Cavalieri's Principle to explain why the volumes of these two triangular prisms are equal.

Each triangular prism has the same base area. Therefore each corresponding cross-section of the prisms will have the same area. Since the two prisms have the same height, the two volumes must be the same.

Figure A

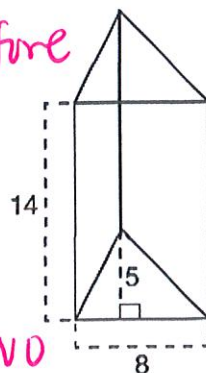


Figure B

