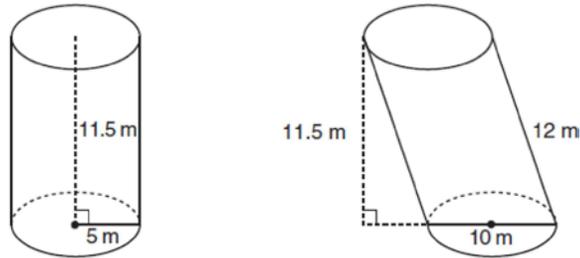


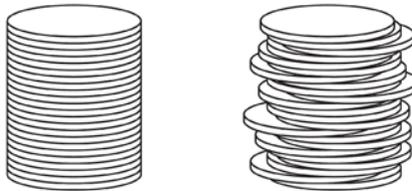
G.GMD.A.2: Volume

- 1 Sue believes that the two cylinders shown in the diagram below have equal volumes.



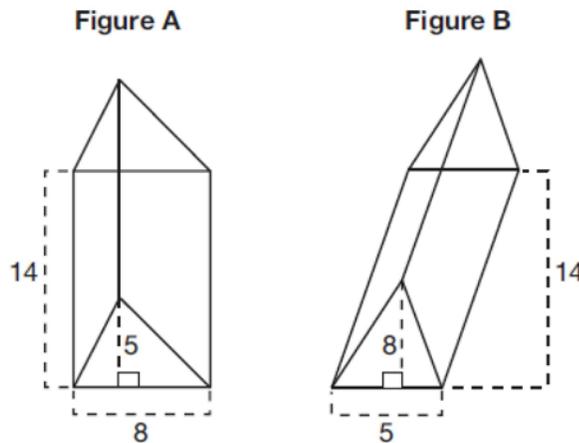
Is Sue correct? Explain why.

- 2 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.

- 3 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.

G.GMD.A.2: Volume**Answer Section**

1 ANS:

Yes. The bases of the cylinders have the same area and the cylinders have the same height.

REF: 081725geo

2 ANS:

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

REF: spr1405geo

3 ANS:

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 of 14, the two volumes must be the same.

REF: 061727geo