Cylinders and Cones Stations Activity

Teacher Directions

This Anchor Problem is designed with 2 stations for students to explore. Depending on timing and the size of your class, you may:

- Have two stations set up, and have student groups rotate to each station.
    - Increase the efficiency and engagement by providing multiple sets of materials at each station, so that groups can explore simultaneously.
- Or, provide materials for one station to each group and have them share their findings with the class after exploring one set of materials.

Station 1: Fillable Containers

- Set out at least one pair of fillable containers - a cylinder and a cone with congruent bases.
- Set up a large container of water - enough to fill the shapes multiple times.
- Place a tray underneath and/or paper towels nearby for spills.

Note: The cylinder should hold approximately 3 times the amount of water as the cone.
Video alternative if materials are not available for this station: Water Demonstration.

Station 2: Cylinders and Cones Image Set

- Print out 1 or more copies of the image set.
- Students will explore the given dimensions and volumes, without physically manipulating materials at this station.

Note: Students should notice that the volume of each pyramid is one-third the volume of the corresponding prism.

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Student-Facing Station Directions

Station 1: Fillable containers

Directions:

1. Fill the cone with water.
2. Carefully pour the contents into the cylinder.
3. Repeat until the cylinder is about full of water.
4. Pour the contents out and try the experiment again.
5. Discuss: What do you notice? What do you wonder? How are the cylinder and cone related?

Station 2: Image Set

Directions:

1. Look at the three figures in the left column.
   Discuss: What shape are they? What are the dimensions? How do the shapes compare to each other? What do you notice about their volumes?
2. Look at the three figures in the right column.
   Discuss: What shape are they? What are the dimensions? How do they compare to each other? How do they compare to the shapes to the left? What do you notice about their volumes?
3. Discuss: What trend do you see? What rule or generalization could you write?

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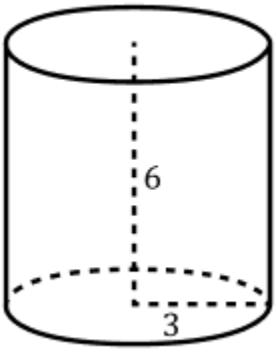
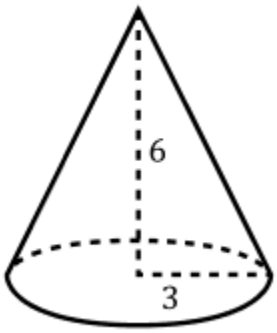
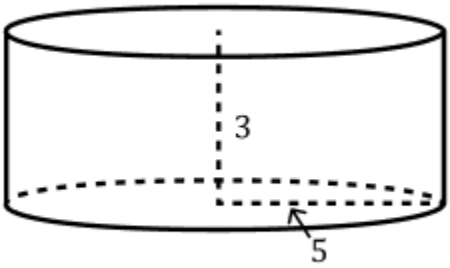
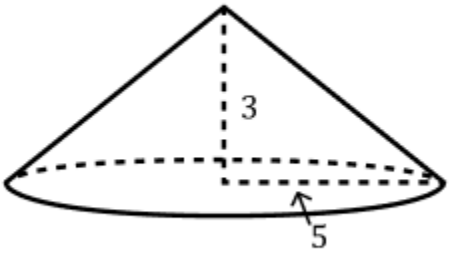
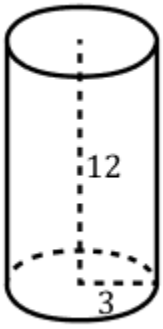
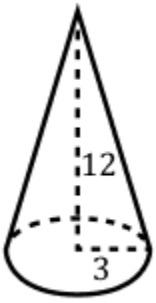
Cylinders and Cones - Image Set

Cylinder A  Volume: 54π in^3	**Cone A**  Volume: 18π in^3
Cylinder B  Volume: 75π in^3	**Cone B**  Volume: 25π in^3
Cylinder C  Volume: 108π in^3	**Cone C**  Volume: 36π in^3

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