Lunar Habitat and What's The Difference (WTD)

Student Worksheets for Case Study 2

Instructional Curriculum

Mathematics: Grades 6-9

Dmitriy Voloshin

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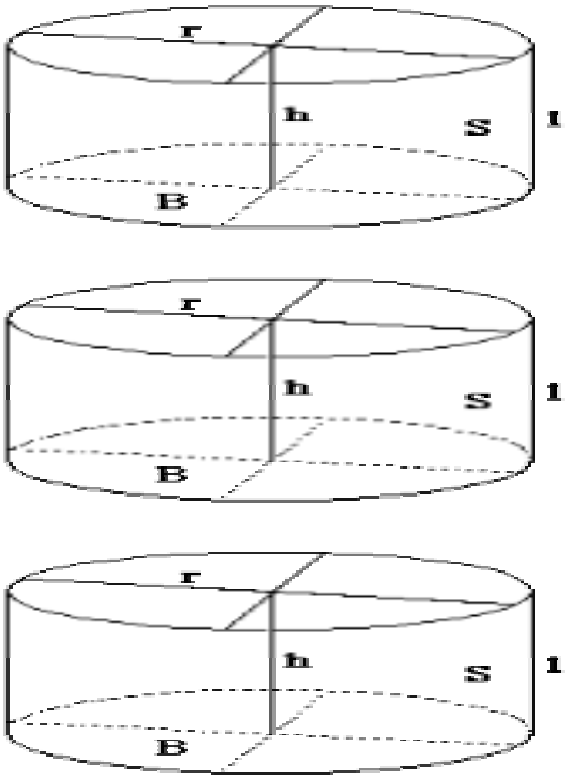
Moon Math Case Study II

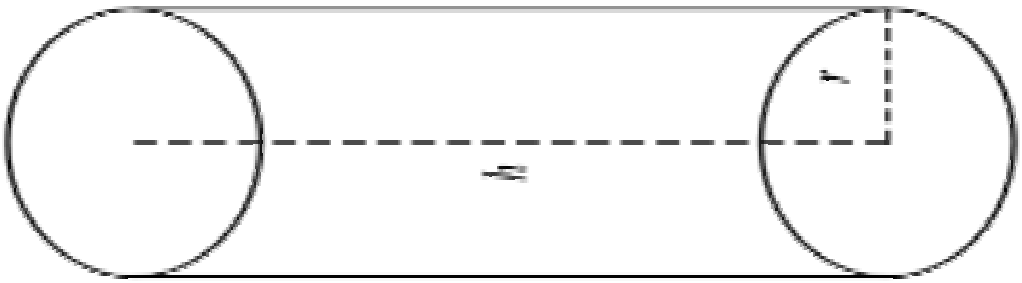
Case Study II: Level A Student Worksheet

Figure A:



Part A:	Consider figure A on the left. In this case, the lunar habitat consists of three cylindrical shapes that are arranged vertically with a stair case connecting each cylinder. Each cylinder represents one floor of the habitat. All three cylinders are congruent which means that they have identical dimensions. Given that the radius of each cylinder (r) is 10 meters and its height (h) is 3 meters, compute the volume of this lunar habitat. Do not include the volume of each staircase in your computations.

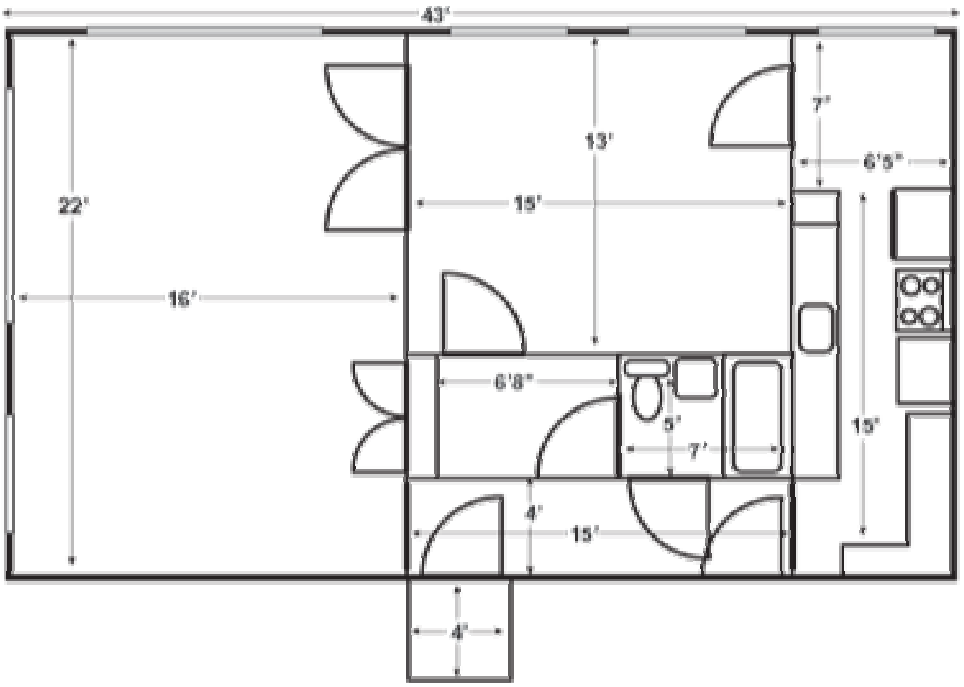
Figure B:



Part B:	Consider figure B above. In this case, a typical elongated cylinder is tilted on its side to create a lunar habitat model. Given that the cylinder has a radius (r) of 4 meters and height (h) of 25 meters, compute the surface volume of this lunar habitat.

Case Study II: Level A Student Worksheet

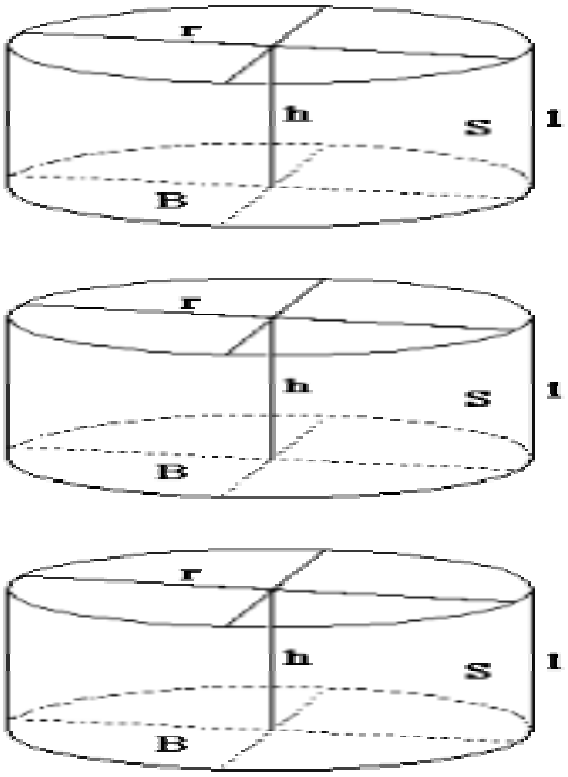
Figure C:



Part C:	Consider figure C above. You are seeing a typical floor plan of a one-bedroom apartment. For comparison purposes, compute the total volume of this apartment assuming that the ceilings are nine feet high. Make sure to convert all units of measure to the metric system.

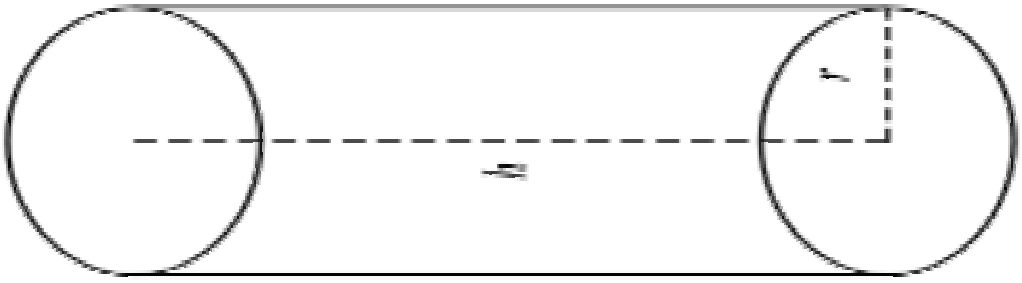
Case Study II: Level B Student Worksheet

Figure A:



Part A:	Consider figure A on the left. In this case, the lunar habitat consists of three cylindrical shapes that are arranged vertically with a stair case connecting each cylinder. Each cylinder represents one floor of the habitat. All three cylinders are congruent which means that they have identical dimensions. Given that the radius of each cylinder (r) is 10.3 meters and its height (h) is 2.4 meters, compute the volume of this lunar habitat. Do not include the volume of each staircase in your computations.

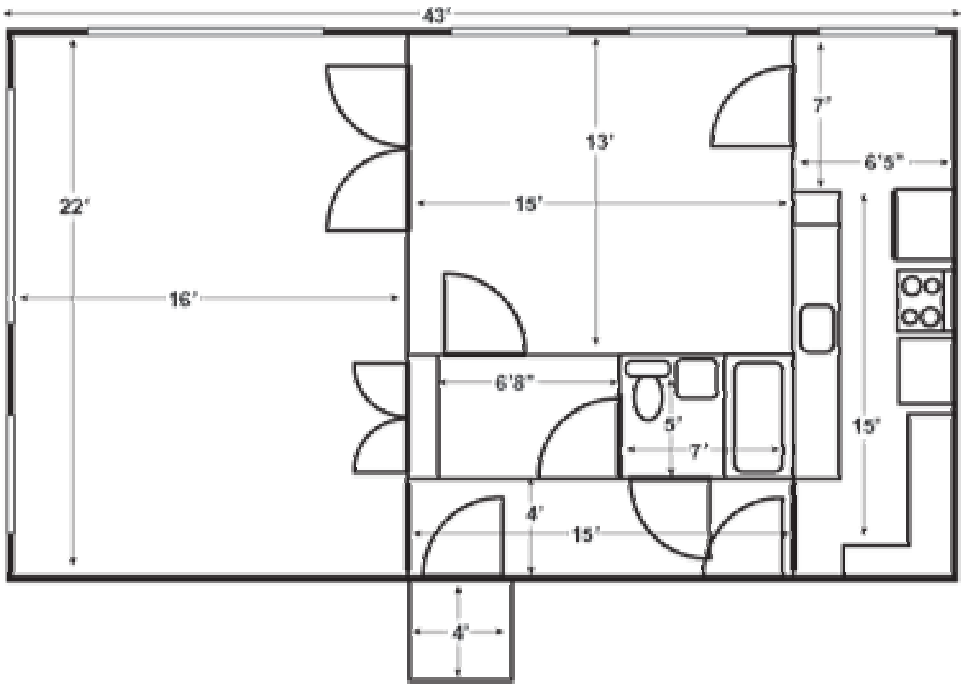
Figure B:



Part B:	Consider figure B above. In this case, a typical elongated cylinder is tilted on its side to create a lunar habitat model. Given that the cylinder has a radius (r) of 3.5 meters and height (h) of 26.18 meters, compute the volume of this lunar habitat.

Case Study II: Level B Student Worksheet

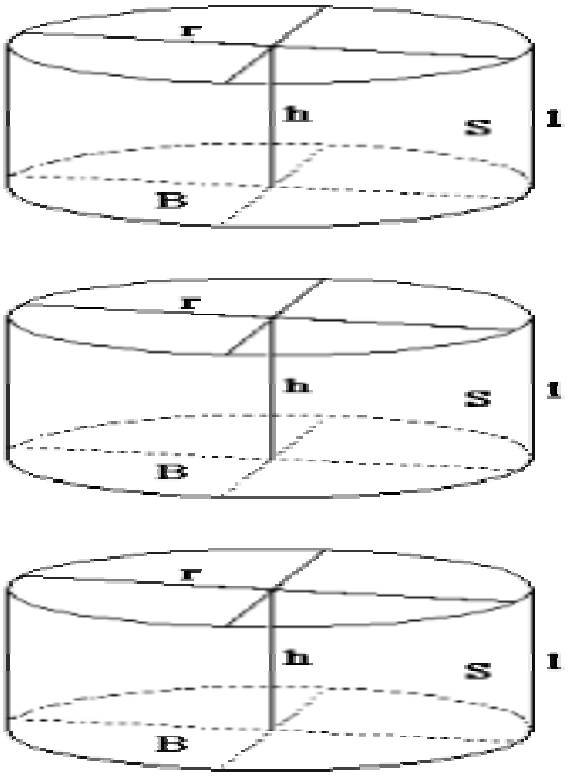
Figure C:



Part C:	Consider figure C above. You are seeing a typical floor plan of a one-bedroom apartment. For comparison purposes, compute the volume of this apartment assuming that the ceilings are nine feet high. Present your answer in both cubic feet and cubic meters units of measure.

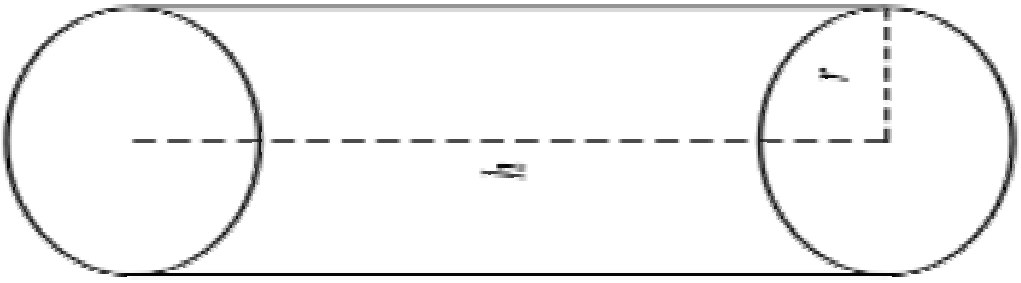
Case Study II: Level C Student Worksheet

Figure A:



Part A:	Consider figure A on the left. In this case, the lunar habitat consists of three cylindrical shapes that are arranged vertically with a stair case connecting each cylinder. Each cylinder represents one floor of the habitat. All three cylinders are congruent which means that they have identical dimensions. Given that the radius of each cylinder (r) is 9 3/4 meters and its height (h) is 3 4/5 meters, compute the volume of this lunar habitat. Do not include the volume of each staircase in your computations.

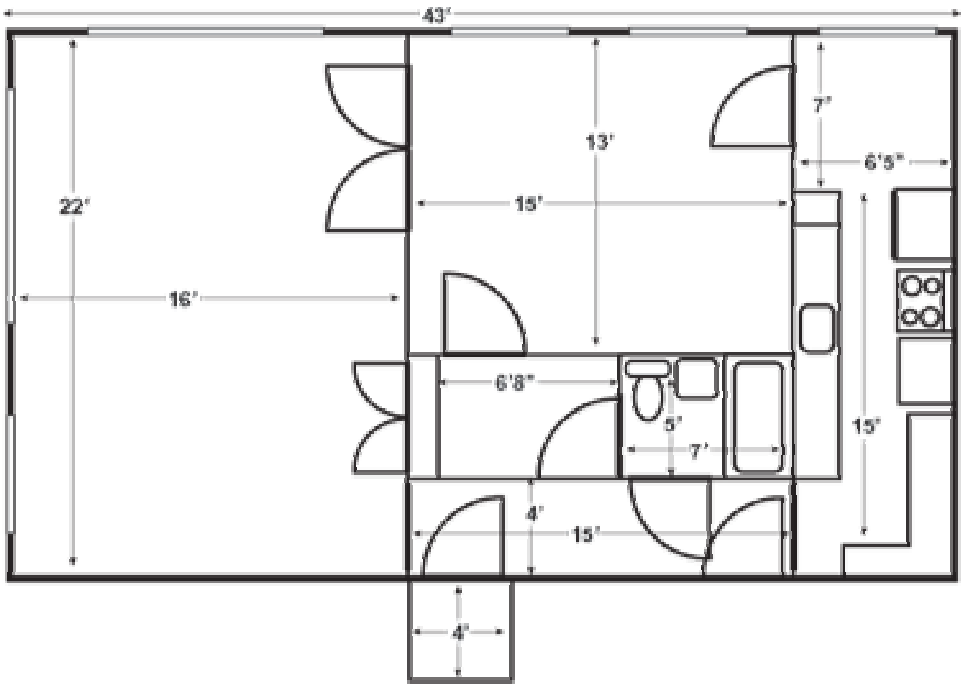
Figure B:



Part B:	Consider figure B above. In this case, a typical elongated cylinder is tilted on its side to create a lunar habitat model. Given that the cylinder has a radius (r) of 3 1/5 meters and height (h) of 27 9/10 meters, compute the volume of this lunar habitat.

Case Study II: Level C Student Worksheet

Figure C:



Part C:	Consider figure C above. You are seeing a typical floor plan of a one-bedroom apartment. For comparison purposes, compute the volume of this apartment assuming that the ceilings are nine feet high. Present your answer in both cubic feet and cubic meters units of measure.

Lunar Habitat

Case Study II: Findings Sheet

Name(s): _____
Level: _____
Period: _____
Date: _____

Directions: Fill out this sheet completely and turn it in with all work to your teacher.

Question	Answer	Reasoning
Question 1: What was the volume of figure A?		
Question 2: What was the volume of figure B?		
Question 3: Which was the volume of figure C?		