3d Geometry Jeopardy

<u>Polyhedra</u>

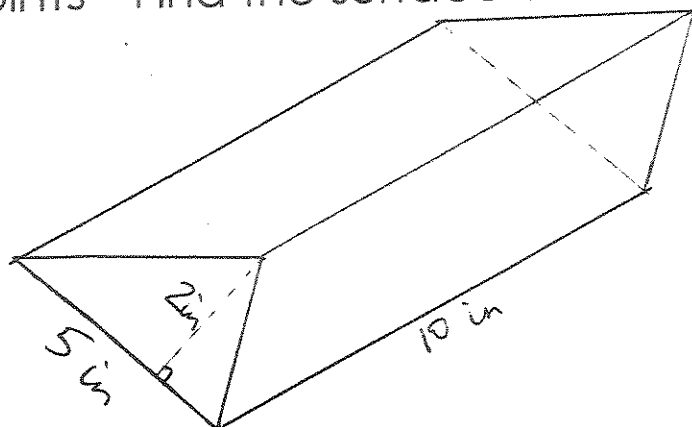10 points-- Why can't we make a Platonic solid with hexagonal faces?

20 points-- Draw a right triangular pyramid.

30 points-- List the Platonic Solids.

40 points-- A prism has 96 edges. How many vertices and faces does it have?

Surface Area

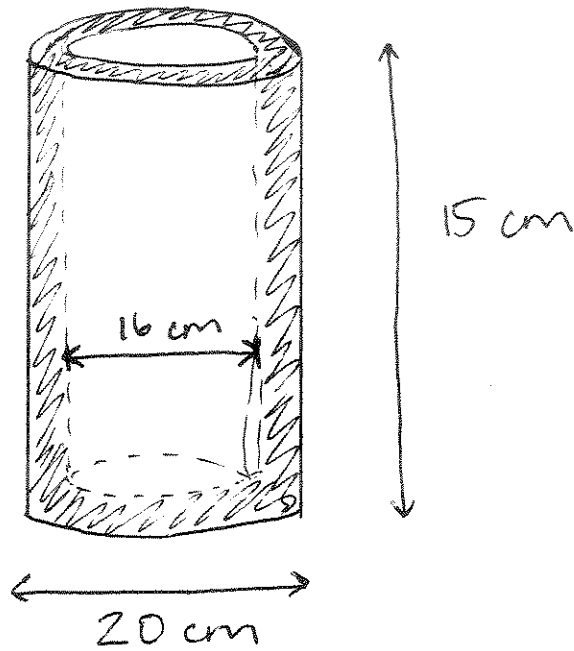10 points-- Find the surface area of the following solid.

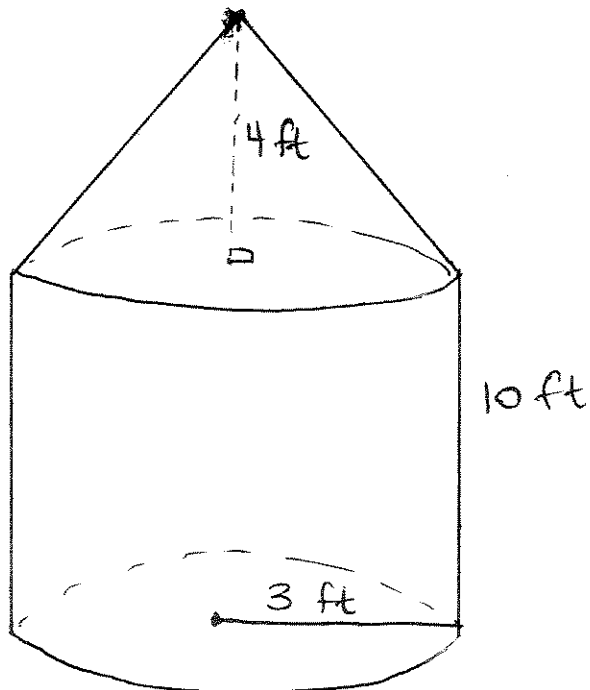20 points-- Find the surface area of a sphere with radius of 5 meters.

30 points-- Find the surface area of a right circular cone with radius of 2 ft. and height of 6 ft.

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Surface Area (continued)
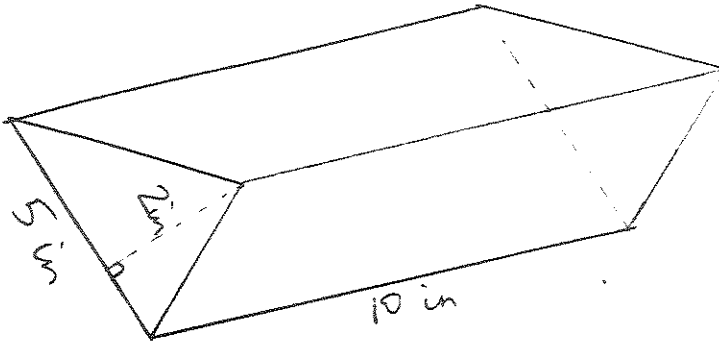
40 points-- Find the surface area of the following shell.

15 cm

16 cm

20 cm

50 points-- Find the surface area of the following solid.

4 ft

10 ft

3 ft

Volume

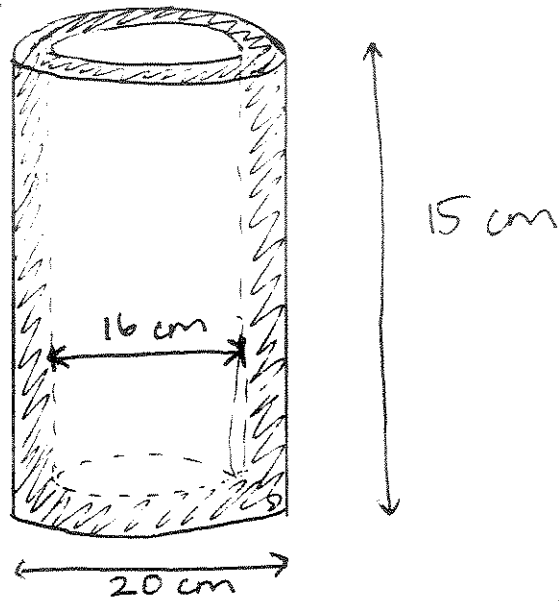10 points-- Find the volume of the following solid.

5 m

3 m

10 in

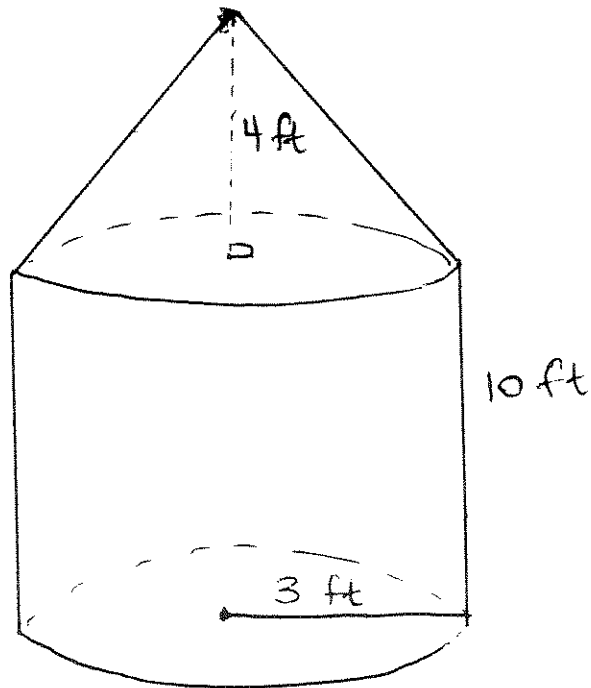20 points-- Find the volume of a sphere with radius of 5 meters.

30 points-- Find the volume of a right circular cone with radius of 2 ft. and height of 6 ft.

Volume (continued)
40 points-- Find the volume of the following shell.

15 cm

16 cm

20 cm

50 points-- Find the volume of the following solid.

4 ft

10 ft

3 ft

Scaling

10 points-- If a cube's sides double in length, what happens to its surface area?

20 points-- If a cube's sides triple in length, what happens to its volume?

30 points-- We have a scale model prism whose height is 5 inches, and we want the actual prism to have a height of 10 feet. What is the relationship between the scale model's surface area and the actual surface area?

Scaling (continued)

40 points-- We have a scale model prism whose height is 5 inches, and we want the actual prism to have a height of 10 feet. What is the relationship between the scale model's volume and the actual volume?

50 points-- For a right square pyramid with height h = 8 inches and the base side length = 5 inches, what is the surface area and volume? If we scale that up to have a height of 3 ft, what is its surface area and volume?
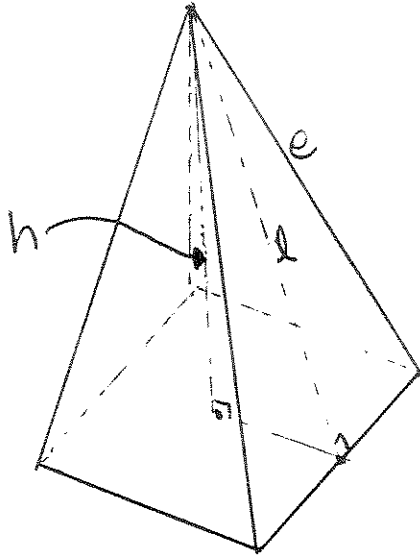
Hodge Podge

10 points-- Give an exact definition of a sphere.

20 points-- What is Euler's Formula and what does it apply to?

30 points-- Find the area of a regular hexagon whose sides are 4 cm in length.

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(continued)
40 points-- What is the relationship between h, l
and e (as drawn on this pyramid)?

50 points-- State the Pythagorean Theorem and
give a proof.