AP Psychology
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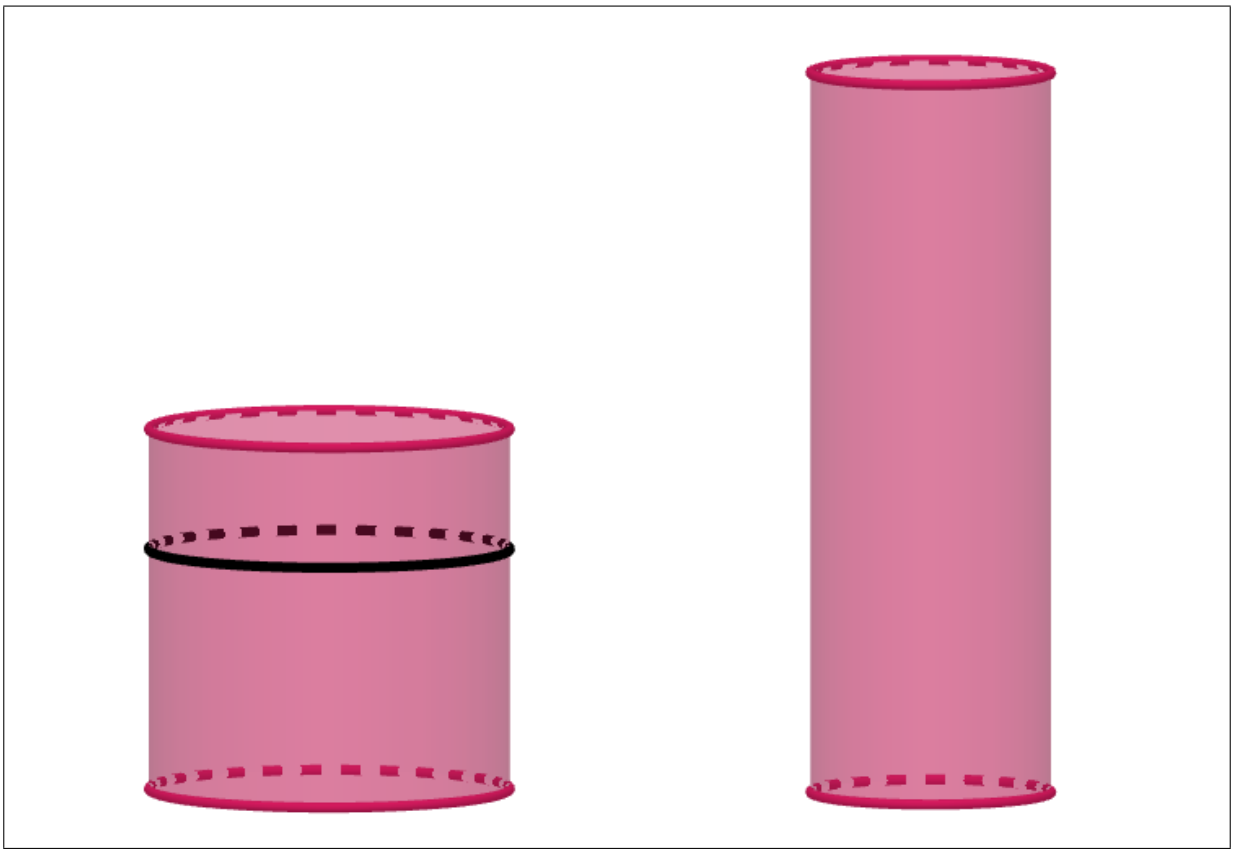
Activity 0111
Wednesday, January 11, 2023

Name:

Problem 1. The short glass has liquid in it up to the indicated circle. Imagine pouring the liquid into the tall glass.



On the picture of the tall glass, draw a circle which shows how much liquid it will contain after the liquid is poured into the tall glass:

(a) As perceived by a 3 year old.

(b) As perceived by a 7 year old.

Think about how an older person may approach this problem, to obtain an exact answer:

- Concretely
- Abstractly

The volume of a cylinder is $V = Ah = \pi r^2 h$, where:

- V is the volume
- A is the area of the base of the cylinder
- r is the radius of the circular base
- h is the height of the cylinder

Problem 2. Given:

- The short glass has radius 3 and height 6. The liquid in it has height 4.
- The tall glass has radius 2 and height 12.

Compute:

(a) The volume of the liquid in the short glass.

(b) The height of the liquid after it is poured into the tall glass.

Problem 3. A cylindrical glass contains a volume $V = 20\pi$ of liquid up to a height of $h = 11$. Find the radius of the glass.

Problem 4. Given a cylindrical glass of radius r containing a volume V of liquid, find the height of the liquid in terms of V and r.