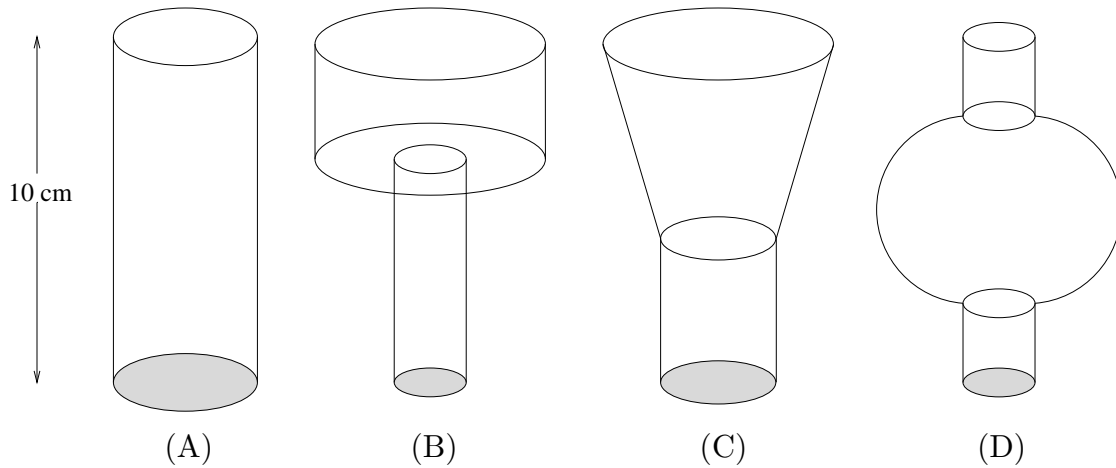


**Problem statement** Four containers are each 10 cm tall. Each of them has a volume of  $30 \text{ cm}^3$  and each is being filled by a liquid at the rate of  $5 \text{ cm}^3$  per minute. Here is a picture of the containers:



- For each of the containers, graph the height,  $h(t)$ , of the level of the liquid in the containers measured in centimeters as a function of time,  $t$ , measured in minutes.
- Which of the functions graphed in a) are continuous? Explain your answers.
- Which of the functions graphed in a) are differentiable? Explain your answers.