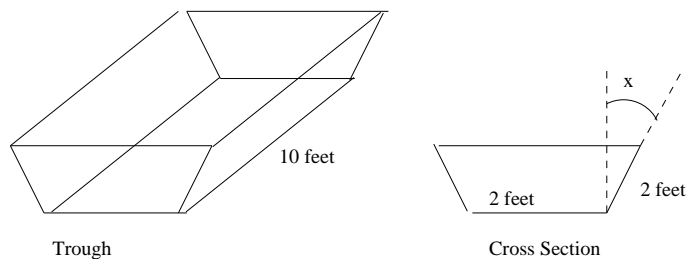


10. (10 points) A trough, as shown in the figure, is to be made with a base that is 2 feet wide and 10 feet long. The sides of the trough are also 2 feet wide by 10 feet long and are to be placed so that they make an angle x with the vertical.



(a) What is the area, in terms of x , of a cross section of the trough perpendicular its long side? What is the volume of the trough? Show your work.

(b) What angle x will give the trough of largest volume, and what is that volume? Explain how you found your answer, along with any supporting evidence (you may use your calculator).