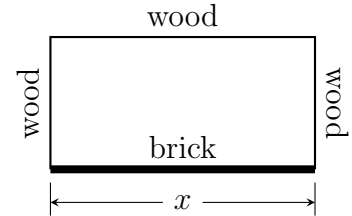


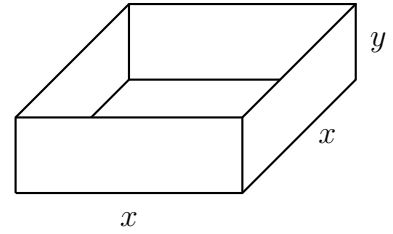
Name: _____

1. A rectangular region of 600 square feet needs to be enclosed by a fence. The south side of the region will be bounded by a brick wall, and the fencing on the remaining three sides will be made of wood. The brick wall is \$10 per foot, and the wood wall costs \$5 per foot. Find the length x of the brick wall that results in the lowest cost of materials.

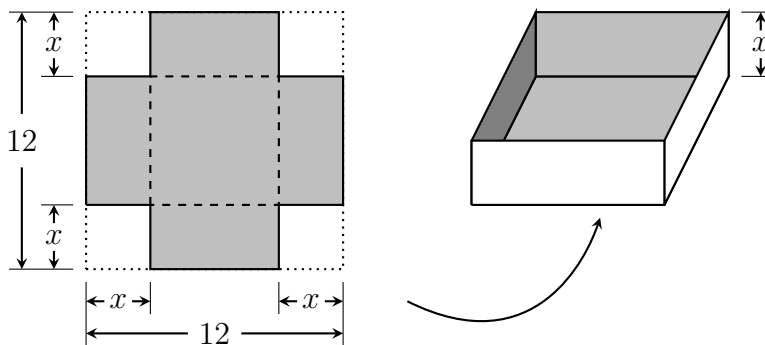


Name: _____

1. A cardboard box with a square base and open top is to have a volume of 4 cubic meters. Find the dimensions that result in a box that uses the least cardboard.



1. An open-top box is made from a 12 by 12 inch piece of cardboard by cutting a square from each corner, and folding up. What should x be to maximize the volume of the box?



Name: _____

1. A metal box with two square ends and an open top is to contain a volume of 36 cubic inches. What dimensions x and y will minimize the total area of the metal surface?

