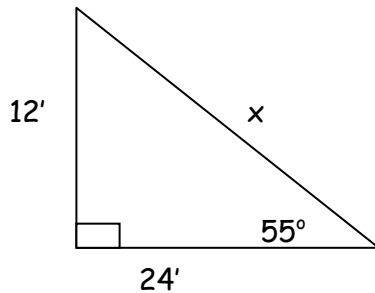


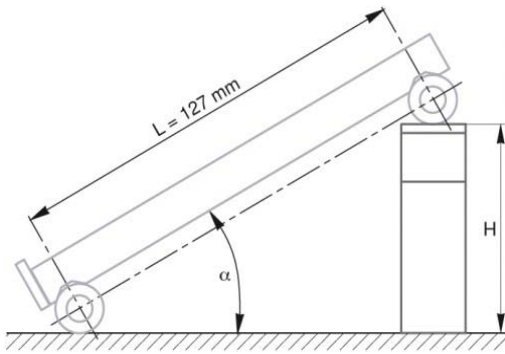
## Applications of Right-Angle Trigonometry

Solve these application questions. Find angles to the nearest degree and distances to the nearest tenth of a unit.

1. The Physical Education teacher at your school would like you to build hockey nets for the program. However the Phys Ed teacher does not want the nets bigger than 12 x 24 x 48 inches in dimension. Using the information shown below calculate the missing length,  $x$ , of steel needed to fabricate the hockey nets?



2. Your Manufacturing teacher asks you to mill a block of steel at an angle of exactly  $36^\circ$ . Using the dimensions of the sine bar below calculate the build up of gauge blocks required in order to mill the block at  $36^\circ$ .



Picture taken from:

<http://www.europaprecision.com/customer-support/contact-us.htm>

3. A ship on the ocean surface detects a sunken ship on the ocean floor at an angle of depression of  $50^\circ$ . The distance between the ship on the surface and the sunken ship on the ocean floor is 200 metres. If the ocean floor is level in this area, how far above the ocean floor, to the nearest metre, is the ship on the surface?
4. The manufacturing class at your School just received a new engine lathe. The teacher wants to place the lathe 12 m away from the wall at a  $45^\circ$  angle from the door. How far is the engine lathe from the door?
5. From a spot 60 ft from the base of a building, David measures the angle of elevation to the top of the building to be  $48^\circ$ , and the angle of elevation to the top of an antenna on top of the building to be  $56^\circ$ . Find both the height of the building and the height of the antenna, each to the nearest foot.