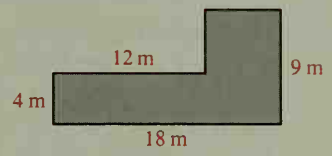
25. Find the area of a square with diagonals of length d.

26. The length of a rectangle is 12 cm more than its width. Find the area of the rectangle if its perimeter is 100 cm.

27. A path 2 m wide surrounds a rectangular garden 20 m long and 12 m wide. Find the area of the path.

28. How much will it cost to blacktop the driveway shown if blacktopping costs \$11.00 per square meter?



Ex. 28

29. A room 28 ft long and 20 ft wide has walls 8 ft high.

a. What is the total wall area?

b. How many gallon cans of paint should be bought to paint the walls if 1 gal of paint covers 300 ft^2?

30. A wooden fence 6 ft high and 220 ft long is to be painted on both sides.

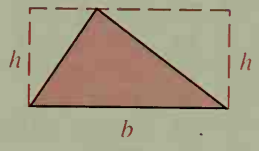
a. What is the total area to be painted?

b. A gallon of a certain type of paint will cover only 200 ft^2 of area for the first coat, but on the second coat a gallon of the same paint will cover 300 ft^2. If the fence is to be given two coats of paint, how many gallons of paint should be bought?

31. A rectangle having area 392 m^2 is twice as long as it is wide. Find its dimensions.

32. The lengths of the sides of three squares are s, $s + 1$, and $s + 2$. If their total area is 365 cm^2, find their total perimeter.

33. Derive a formula for the area of the triangle shown by using the formula for the area of a rectangle.



Ex. 33

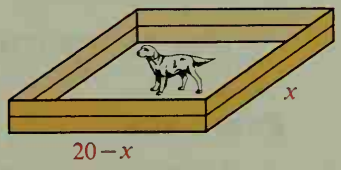
34. The diagonals of a rectangle are 18 cm long and intersect at a 60° angle. Find the area of the rectangle.

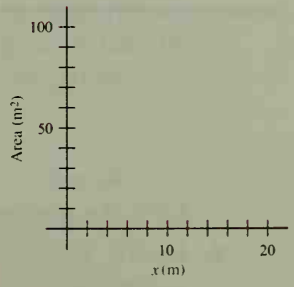
35. **a.** Suppose you have 40 m of fencing with which to make a rectangular pen for a dog. If one side of the rectangle is x m long, explain why the other side is $(20 - x)$ m long.

b. Express the area of the pen in terms of x.

c. Find the area of the pen for each value of x: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20. Record your answers on a set of axes like the one shown.

d. Give the dimensions of the pen with the greatest area.



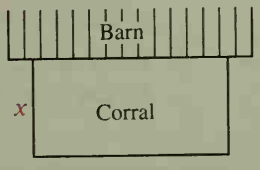


C **36.** A farmer has 100 m of fencing with which to make a rectangular corral. A side of a barn will be used as one side of the corral, as shown in the overhead view.

a. If the width of the corral is x, express the length and the area in terms of x.

b. Make a graph showing values of x on the horizontal axis and the corresponding areas on the vertical axis.

c. What dimensions give the corral the greatest possible area?



37. Draw a rectangle. Then construct a square with equal area.