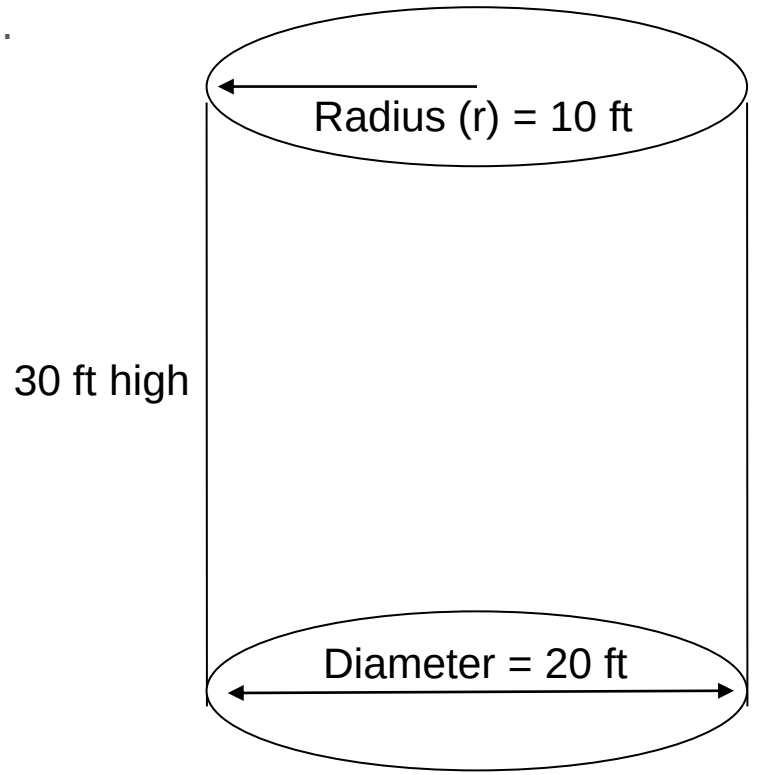
Calculating the Volume of Sugar in a Silo

Use the calculations for the volume of a cylinder : **$\pi r^2 h$**

- Determine the radius (r) in feet (ft) (the diameter of the bin divided by 2).
- Multiply the radius (r) times the radius (r) = r ft^2
- Multiply the result of r ft^2 times π (3.141) times 1 ft. = x ft^3
- Sugar averages 56 pounds per ft^3: Multiply 56 lbs times x ft^3 = x lbs of sugar
- Divide x lbs of sugar by 12 inches = lbs of sugar per inch

Sugar Silo



EXAMPLE:

- Silo diameter is 20 ft. Therefore radius (r) equals 10.
- r times r (r^2) = 100 ft^2.
- 100 ft^2 times π (3.141) times 1 ft = 314.1 ft^3.
- 314.1 ft^3 multiplied by 56 pounds ft^3 = 17,590 lbs of sugar.
- Divide 17,590 lbs by 12 inches = 1,465.8 lbs of sugar per inch.

Therefore, if this silo has 20 ft (240 inches) of sugar in it,
240 inches multiplied by 1,465.8 lbs of sugar per inch = 351,792 lbs of sugar