Professor Robert E. Griffiths

Course: MGF 1106 Mathematics for the Liberal Arts I

Chapter 10, Section 10.5 Volume

Water Usage Awareness

Volume of a right rectangular solid

V = L x W x H

If your living room was 16 ft long, 12 ft wide and 8 ft tall calculate the Volume.

V = (16 ft)(12 ft)(8 ft) = 1536 cubic feet

1 Gallon = 231 cubic inches

How many gallons will fill your living room?

First convert from cubic feet to cubic inches. 12 inches = 1 foot

(1536 ft^3)(12 in/ft)(12in/ft)(12 in/ft) = 2,654,208 cubic inches

Then convert from cubic inches to gallons.

(2,654,208 cu in)(1 gallon/231 cu in) = 11,490 gallons

Miami Dade County pumps half a billion gallons of waste water into a porous aquifer (the Floridan Aquifer) under our drinking water supply (the Biscayne Aquifer) every day.

How many living rooms full of partially treated sewage is that?

(500,000,000 gallons of waste water)(1 living room / 11,490 gallons) = 43.5 living rooms full of waste water per day.

How many in a year?

(43.5 living rooms full of sewage/day)(365 days/year) = 15,8777.5 rooms full of sewage per year.

That is only a third of the waste water we generate. Most of the rest gets pumped out to sea.

Both practices have inherent risks but it would be too expensive to improve our treatment.

The most important thing we can do is CONSERVE our WATER.