

### Answer on Question #52998-Physics-Mechanics-Kinematics-Dynamics

In a test to determine the bulk modulus of elasticity of a liquid it was found that as the absolute pressure was changed from 2MPa to 4MPa, the volume decreased from 1500 cm<sup>3</sup> to 1488cm<sup>3</sup>. Determine the bulk modulus of elasticity of this liquid.

#### Solution

The bulk modulus of elasticity of this liquid is

$$E = -\frac{\Delta p}{\left(\frac{\Delta V}{V}\right)} = -\frac{4\text{MPa} - 2\text{MPa}}{\left(\frac{1488 \text{ cm}^3 - 1500 \text{ cm}^3}{1500 \text{ cm}^3}\right)} = 250\text{MPa}.$$

**Answer: 250MPa.**