

Forces in Fluids • Math Skills**Math Skills**

For the problems below, show your calculations. If you need more space, use another sheet of paper. Write the answers for the problems on the lines below.

Calculating Pressure

1. Pressure = $\frac{20 \text{ N}}{10 \text{ m}^2} = \underline{2 \text{ Pa}}$

2. A force of 25 N is exerted on a surface with an area of 5 m². What is the pressure on that area?

$$P = \frac{F}{A} \Rightarrow \frac{25 \text{ N}}{5 \text{ m}^2}$$

Answer: 5 Pa

3. A force of 160 N is exerted on a surface with an area of 40 m². What is the pressure on that area?

$$P = \frac{F}{A} = \frac{160 \text{ N}}{40 \text{ m}^2}$$

Answer: 4 Pa

Density

4. Density = $\frac{12 \text{ g}}{3 \text{ cm}^3} = \underline{4 \text{ g/cm}^3}$

5. A substance has a mass of 30 g and a volume of 15 cm³. What is its density?

$$D = \frac{m}{V} = \frac{30 \text{ g}}{15 \text{ cm}^3}$$

Answer: 2 g/cm³

6. A substance has a volume of 20 cm³ and a mass of 10 g. What is its density?

$$D = \frac{m}{V} = \frac{10 \text{ g}}{20 \text{ cm}^3}$$

Answer: 0.5 g/cm³