

Subtopic: Pressure and pressure in fluids

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Q1.(2018)

all heights drawn the same as
tube 1

Q2.(2018)

a)

increasing depth increases the
height / mass / volume (of the
water column) above the
swimmer

increasing the weight / force (of
water) acting on the swimmer

b)

increase in depth = 1.2 (m)

$$(\Delta) p = 1.2 \times 1030 \times 9.8$$

$$(\Delta) p = 12112.8$$

pascals **or** Pa

Q3.(2023)

a)

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

b)

area of base = 0.0144 (m²)

$$1500 = \frac{F}{0.0144}$$

$$F = 1500 \times 0.0144$$

$$F = 21.6 \text{ (N)}$$

Q4.(2024)

a)

the height of the (column of)
water above the submarine
increases

which increases the force /
weight (of the water) acting on
the submarine so pressure
increases

b)

$$p = 110\,000\,000 \text{ Pa}$$

$$110\,000\,000 = 1026 \times 9.8 \times \Delta h$$

$$\Delta h = \frac{110\,000\,000}{1026 \times 9.8}$$

$$\Delta h = 10\,940 \text{ (m)}$$

c)

P-waves are longitudinal and S-
waves are transverse