Question 1

- A fluid in static equilibrium cannot sustain :

a. compressive stress
b. normal stress
c. shear stress
d. bending stress
e. None of these

Question 2

❑ The boundary conditions are important because :

a. Allow generalizing the solution

b. Find the equation to match the specific physical condition

c. Identify limitations of solution

d. Only boundary matters for pressure variation

e. None of the above

Question 3

- The vector $\underset{t_{xy}}{\longrightarrow}$ shows the component of shear stress acting on

a. yz plane
b. xz plane
c. xy plane
d. Normal to xy plane
e. None of the above

Question 4

❑ A cubical metal tank of dimension W is submerged in another water tank. The correct formulation for differential force to calculate total surface force on the cubical metal tank due to the surrounding water is :

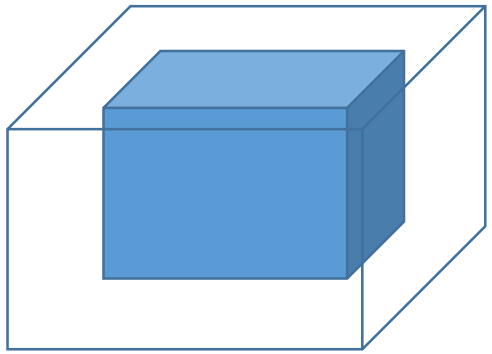
a. $\int 4\,\rho\,g\,y\,W\,dy$

b. $\int 2\,\rho\,g\,y\,W\,dy$

c. $\int\ \rho\,g\,y\,W\,dy$

d. $\int \rho\,g\,y\,W^2\,dy$

e. None of the above



Question 5

- In an isothermal atmosphere, the pressure :

a. Remains constant

b. Decreases linearly with elevation

c. unpredictable

d. Varies in the same way as density

e. Increases exponentially with elevation

Question 6

- A 3D force of 10 N is applied at a point. It makes an angle of 30 deg with z axis and an angle of 40 deg with y axis. The force in xz plane is :

a. 10 sin 40

b. 10 cos 40

c. 10 sin 30

d. 10 cos 30

e. 10 cos 60

In your original quiz, the angle was 45, hence both sin and cos (ie a and b) were accepted as answers. You have been awarded points for both a and b. I changed angle to show the correct expression.