

4. Which of the following expressions gives the volume of a solid whose base in the xy -plane is region Q and whose cross sections, perpendicular to the x -axis, are squares with a side in the xy -plane?

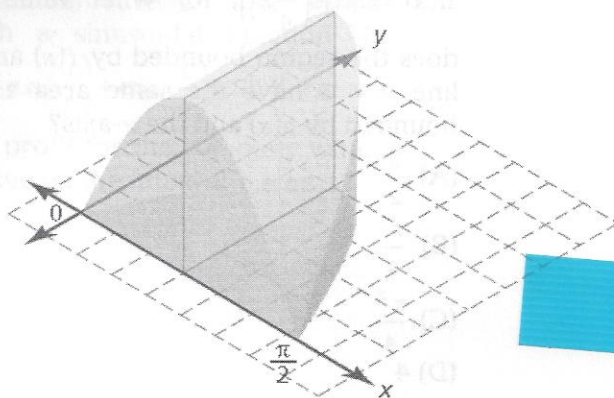
(A) $\pi \int_0^{\frac{\pi}{2}} (1 - \cos^2 2x) dx$

(B) $\int_0^{\frac{\pi}{2}} \sin^2 2x dx$

(C) $\int_0^{\frac{\pi}{2}} (1 - \cos 2x) dx$

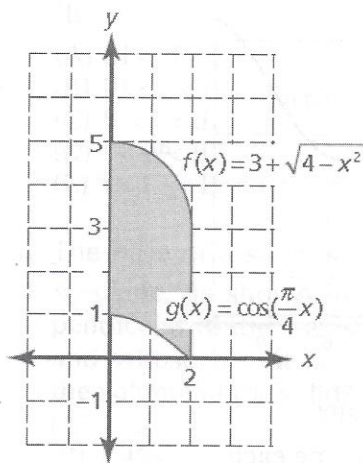
(D) $\int_0^{\frac{\pi}{2}} (1 - \cos 2x^2) dx$

(E) $\pi \int_0^{\frac{\pi}{2}} \sin(2x)^2 dx$



For Question 5, region W is bounded by $f(x) = 3 + \sqrt{4 - x^2}$,

$g(x) = \cos\left(\frac{\pi}{4}x\right)$, $x = 0$, and $x = 2$.



5. What is the area of the region W ?

(A) 6.000

(B) $6 + \pi - \frac{4}{\pi}$

(C) $6 + \pi + \frac{4}{\pi}$

(D) $6 + 2\pi - \frac{4}{\pi}$

(E) $6 + 2\pi + \frac{4}{\pi}$