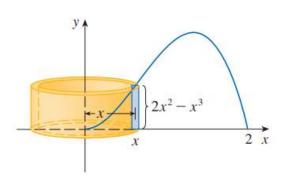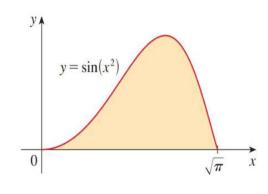**Question 1:** *Let R be a region bounded by* $y = 2x^2 - x^3$,

$y = 0$ *and* $x = 0$ *find the volume formed by revolving the region R about y axis*



**Question 2:** *Let R be a region bounded by* $y = \sin(x^2)$ *and* $y = 0, 0 \le x \le \sqrt{\pi}$ *find the volume formed by revolving the region R about y axis*

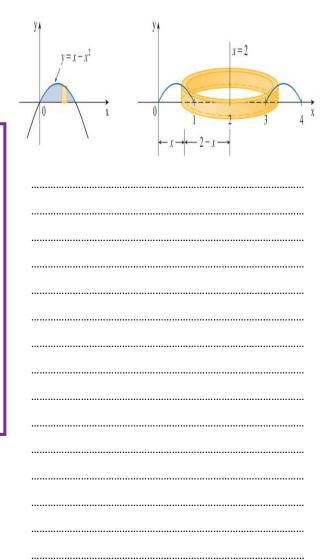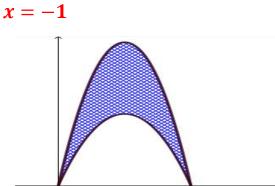**Question 3:** *Let R be a region bounded by* $y = x - x^2$ *,* $y = 0$

*and* $x = 0$ *find the volume formed by revolving the region R about* **$x = 2$**



**Question 4:** *Let R be a region bounded by* $y = 4x - x^2$

*,* $y = 8x - 2x^2$, $y = 0$ *and* $x = 0$

*Find the volume formed by revolving the region R about*

**$x = -1$**

**Question 5:** *Let R be a region bounded by* $y = \sqrt{x - 1}$, $y = 0$

*and* $x = 5$ *find the volume formed by revolving the region R about* $y = 3$

**Question 6:** *Let R be a region bounded by* $y = \sqrt{x - 1}$,

$y = 0$ *and* $x = 5$ *find the volume formed by revolving the region R about* **y axis**

**Question 7:** *Let R be a region bounded by* $y = 6 - 2x$

*,* $y = 4x^2, x = 3$ *and*

$\frac{-3}{2} \leq x \leq 3$ *.Find the volume formed by revolving the region R about* $x = 3$

**Question 7:** *Let R be a region bounded by* $y = x^2 - 4x + 7$

*and* $y = 4(x - 2)^2$

*Find the volume formed by revolving the region R about*

<u>*y axis*</u>

**Mr Ibrahim Eldabour**

**Multiple choice**

**Question 1:** *the volume of region R enclosed by*

$$y = \ln x \ , y = 0 \ , x = 2$$

*About y axis can be represent as*

a) $\pi \int_1^2 (\ln x)^2 \, dx$

b) $2\pi \int_1^{ln2} y(e)^{y^2} \, dy$

c) $2\pi \int_0^{ln2} y(e)^{2y} \, dy$

d) $2\pi \int_1^2 x \, lnx \, dx$

**Question 2:** *the given volume using cylindrical shells*

$$2\pi \int_0^1 (2-y)(1-y^2) \, dy$$

*The axis of rotation is*

a) $x = 2$

b) $x = -2$

c) $y = 2$

d) $y = -2$

**Question 3:** *the given volume using cylindrical shells*

$$\pi \int_0^{\frac{\pi}{4}} (\pi + 2x)(cosx - sinx) \, dx$$

*The axis of rotation is*

a) $x = \pi$

b) $x = -\pi$

c) $x = \frac{\pi}{2}$

d) $x = \frac{-\pi}{2}$

**Question 4:** *the given volume using cylindrical shells*

$$2\pi \int_0^2 (4-y)(y+y) \, dy$$

*The height of the shell is*

a) $y = x$

b) $y = -x$

c) $x = \sqrt{y}$

d) $x = |y|$