Name:	**ID:**	**Sec: 10**

MATH-102 **Term-142** **CQ-5**

(circle one letter and show all your work)

1)The volume of the solid generated by revolving the region bounded by the curves $y = 2x$, $y = x^2$ about the line y = -1 is

(a) $\int_0^2 \pi(4x^2 - x^4)dx$

(b) $\int_0^1 \pi(4x^2 - x^4)dx$

(c) $\int_0^2 2\pi((2x+1)x^2)dx$

(d) $\int_0^1 \pi(2x+1)^2 - (x^2+1)^2)dx$

(e) $\int_0^2 \pi(2x+1)^2 - (x^2+1)^2)dx$

(f) None of the above

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2)The volume of the solid generated by revolving the region bounded by the curves $y = 2\sqrt{x}$ and the lines y = 2 , and x = 0 about the x-axis is

(a) $2\pi/5$

(b) $7\pi/5$

(c) π

(d) 2π

(e) $\pi/5$

(f) None of the above

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3)The volume of the solid generated by revolving the region bounded by the curves $y = e^{x-1}$, y = 0 , x=1 and x = 3 about the x-axis is

(a) $\pi(e^4 + 2)/2$

(b) $\pi(e^4 - 1)/2$

(c) $\pi(e^2 - 2)/2$

(d) $\pi(e^4 - 3)/2$

(e) $\pi(e^6 - e^2)$

(f) None of the above

4)The base of a solid is a triangular region bounded by the lines y=x , y=1 , and x=0. If the cross-sections of the solid perpendicular to the y-axis are semi-circles with diameters running across the base of the solid , then the volume of the solid is

(a) $\pi/36$

(b) $3\pi/8$

(c) $\pi/16$

(d) $\pi/24$

(e) $\pi/4$

(f) None of the above

5)The region in the first quadrant enclosed by the parabolas $y = 2 - x^2$, $y = x^2$ and the y-axis is rotating about the line x = -1, then the volume of the solid generated is given by

(a) $\int_0^1 4\pi(1 + x - x^2 - x^3)dx$

(b) $\int_0^2 2\pi(1 + x - x^2 - x^3)dx$

(c) $\int_0^1 4\pi(1 - 2x - 2x^2 + x^3)dx$

(d) $\int_0^2 2\pi(1 - x - x^2 - x^3)dx$

(e) $\int_0^1 2\pi(4 - x^2 + 2x^4)dx$

(f) None of the above