King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 141 Math 102 (7) Quiz#2 (Area between curves + Ch6)
Family Name: S.r#

Q. **Set up - Don't Integrate -** the integration that represents the following:

i. The volume generated by rotating the region enclosed by $y = -2x$, and $y = 2x^2$ about $y = -1$, Using **cylindrical shell** method

ii. The length of the curve $x = \int_1^y \sqrt{t^2 - 1}\,dt, \quad 1 \le y \le 4$

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Q. **Set up - Don't Integrate -** the integration that represents the following:

i. volume generated by rotating the shaded region about the $x-axis$, Using **washer** method

ii. The area of the surface generated by rotating $x = y^2, \quad 1 \le y \le 2$, about the *x-axis*

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Q. **Set up - Don't Integrate -** the integration that represents the following:

i. The area of the shaded region

ii. The volume of the following solid,

the base is the region enclosed by $y = \sqrt{1-x^2}$ & $y = 0$ and
the cross sectional area perpendicular to the *x-axis* are equilateral triangles.