

**King Fahd University of Petroleum and Minerals**  
**Faculty of Science, Prep-Year Math Program**  
**Math 002 - Term 032**  
**Recitation hour (8.1 & 8.2)**

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**Question1**

Find the center, vertices, foci, and eccentricity of the ellipse given by the equation  $9x^2 + y^2 + 18x - 6y + 9 = 0$ .

**Question2**

Find the equation in the standard form of the ellipse that has vertices at  $(5, 6)$  and  $(5, -4)$  and foci at  $(5, 4)$  and  $(5, -2)$ .

**Question3**

Find the center, vertices, foci, eccentricity, and asymptotes of the hyperbola given by the equation  $9y^2 - 4x^2 - 18y + 24x - 63 = 0$ .

**Question4**

Find the equation in the standard form of the hyperbola with vertices  $(2, 3)$  and  $(-2, 3)$ , and eccentricity  $\frac{5}{2}$ .