Algebra II Worksheet #3 Unit 7 Selected Solutions

Given the coordinates of P and Q, find PQ. Round your answers to the nearest tenth.

1. P(-2 , 5) and Q(4 , 3) PQ ≈ 6.3

$$PQ = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$x_1 = -2 \quad y_1 = 5$

$x_2 = 4 \quad y_2 = 3$

$$PQ = \sqrt{(4+2)^2 + (5-3)^2}$$

$$PQ = \sqrt{(6)^2 + (2)^2} = \sqrt{36 + 4}$$

$$PQ = \sqrt{40} \approx 6.3$$

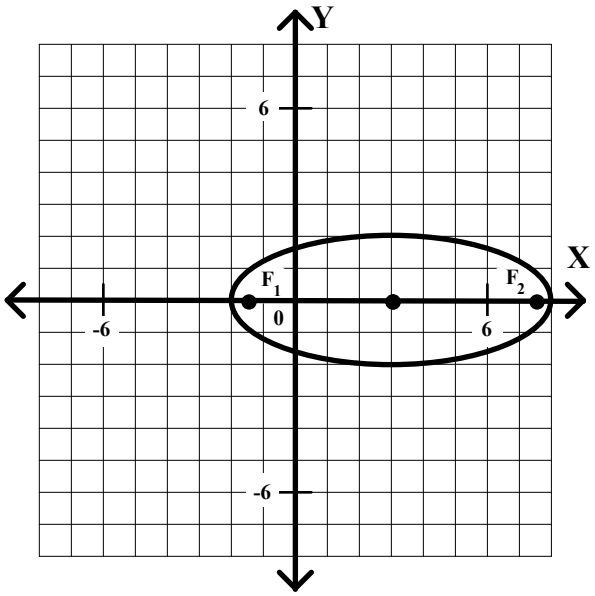
Express each equation in standard form and sketch its graph.

5. $4x^2 + 25y^2 - 24x - 64 = 0$

$4(x^2 - 6x + 9) + 25y^2 = 64 + 36$

$4(x-3)^2 + 25y^2 = 100$

$$\frac{(x-3)^2}{25} + \frac{y^2}{4} = 1$$



6. $x^2 + y^2 - 6x + 2y - 15 = 0$

$(x^2 - 6x + 9) + (y^2 + 2y + 1) = 15 + 9 + 1$

$(x-3)^2 + (y+1)^2 = 25$