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Math 3 Class Work / Homework HYPERBOLA/PARABOLA Quiz Review

I. Classify the conic section of each equation. If the conic section is either a hyperbola or a parabola, find the important characteristics and graph.

1. $x^2 + (y - 3)^2 = 9$

2. $\frac{(x - 4)^2}{16} + \frac{(y - 2)^2}{4} = 1$

3. $(x - 3)^2 = 8(y + 4)$

4. $\frac{(y + 2)^2}{18} - \frac{(x + 1)^2}{25} = 1$

5. $\frac{(x + 3)^2}{32} + \frac{(y - 4)^2}{36} = 1$

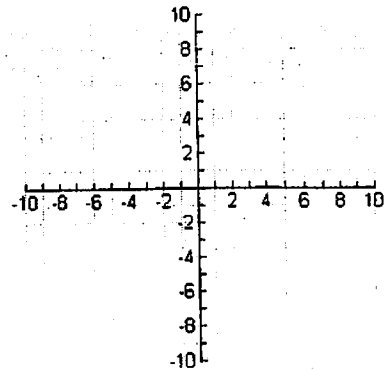
6. $(x - 5)^2 + (y + 2)^2 = 28$

7. $(x - 6)^2 + (y - 2)^2 = 4$

8. $\frac{(y - 8)^2}{16} - \frac{(x + 3)^2}{4} = 1$

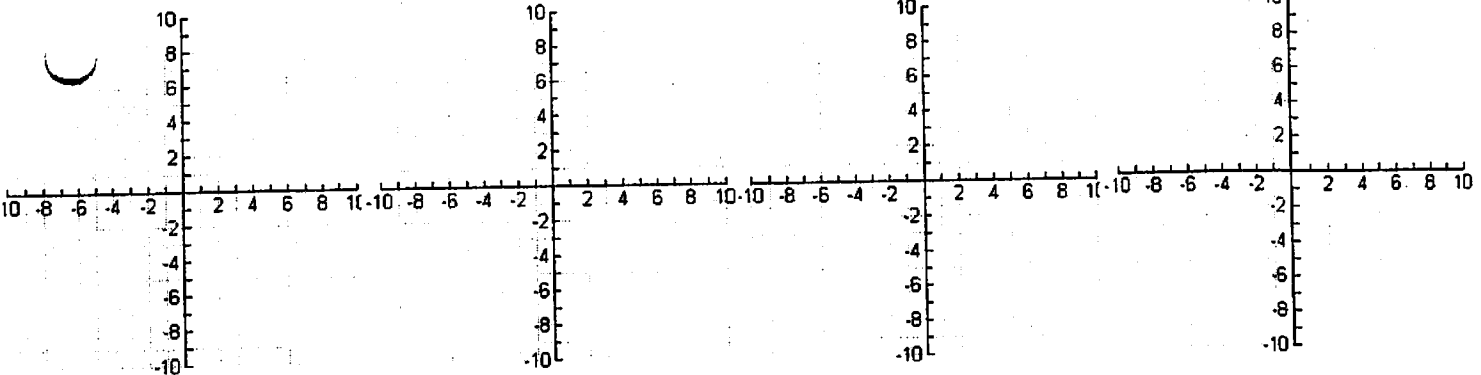
9. $(y - 4)^2 = 3(x + 2)$

10. $\frac{(x + 1)^2}{16} + \frac{(y + 3)^2}{4} = 1$



11. $(x + 7)^2 + (y - 1)^2 = 1$

12. $(x + 7)^2 = 12(y - 3)$



II. Write the equation of the conic section

14. Parabola with vertex at (3, 3) and focus at (3, 0)

16. Hyperbola with vertices at (2, 4) and (8, 4) and foci at (-2, 4) and (12, 4)

18. Parabola with vertex at (-8, 1) and focus at (-8, 3)

20. Hyperbola with vertices at $(0, -2\sqrt{6})$ and $(0, 2\sqrt{6})$ and foci at (0, -5) and (0, 5)

21. Parabola with vertex at (6, 2) and directrix $x = 2$

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III. Classify the conic section of each equation. If the conic section is either a hyperbola or a parabola, write it's equation in standard form, find the important characteristics and graph.

35. $y^2 + 8x - 2y - 15 = 0$

37. $x^2 - 9y^2 + 54y - 90 = 0$

39. $x^2 + 10x - 6y + 7 = 0$

41. $y^2 - 12y + 4x + 4 = 0$

43. $9x^2 - y^2 - 72x + 8y + 119 = 0$

36. $x^2 + y^2 - 12x + 2y + 15 = 0$

38. $9x^2 + 36y^2 + 54x - 144y - 99 = 0$

40. $-2x^2 + 5y^2 + 24x - 20y - 102 = 0$

42. $x^2 + y^2 - 6x - 8y + 24 = 0$

44. $4x^2 + y^2 - 48x - 4y + 48 = 0$

