

Curve Sketching Assignment

Graph the following curves labelling ALL important points (including x and y intercepts, vertices or asymptotes where required.)

PARABOLAE:-

Basic Curve $y = x^2$

1. $y = x^2 + 1$ 2. $y = x^2 - 2$ 3. $y = (x+2)^2$ 4. $y = 3x^2$ 5. $y = (x-1)^2 + 2$
6. $y = (3-x)^2$ 7. $y+1 = x^2$ 8. $y = -2x^2$ 9. $y = (x-1)(x+2)$ 10. $y = 4 - x^2$

CUBICS:-

Basic Curve $y = x^3$

11. $y = x^3 - 2$ 12. $y = x^3 + 3$ 13. $y = (x+1)^3$ 14. $y = (x+2)(x-1)^2$ 15. $y = (x-2)^3$
16. $y = -x^3$ 17. $y = (x-1)(x+2)(x+3)$ 18. $y = x(x^2 - 1)$ 19. $y = x^2(x-3)$ 20. $y = (x-3)(x+2)^2$

HYPERBOLAE:-

Basic Curve $y = \frac{1}{x}$ or $xy = 1$

21. $y = \frac{2}{x}$ 22. $xy = 4$ 23. $y = \frac{1}{x} + 1$ 24. $y = \frac{1}{x} - 1$ 25. $y + 1 = \frac{1}{x}$
26. $y - 3 = \frac{1}{x}$ 27. $y = \frac{1}{x+1}$ 28. $y = \frac{1}{x-2}$ 29. $y - 2 = \frac{1}{x-2}$ 30. $y = \frac{1}{x+2} - 3$

EXPONENTIALS:-

Basic Curve $y = a^x$

31. $y = 2^x$ 32. $y = 5^x$ 33. $y = 3^x + 1$ 34. $y + 1 = 4^x$ 35. $y = 2^{-x}$
36. $y = 3^{x+1}$ 37. $y = 1^x$ 38. $y = 3^{-x-1}$ 39. $y + 2 = 4^{x+2}$ 40. $y - 1 = 2^{1-x}$

CIRCLES:-

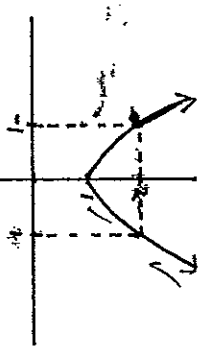
Basic Curve $x^2 + y^2 = r^2$ $[(x-h)^2 + (y-k)^2 = r^2]$ centre (h, k)

41. $x^2 + y^2 = 1$ 42. $y^2 = 4 - x^2$ 43. $x^2 + (y-1)^2 = 25$ 44. $(x+2)^2 + (y)^2 = 16$ 45. $y = \pm\sqrt{36 - x^2}$
46. $y = \sqrt{4 - x^2}$ 47. $x = \sqrt{25 - y^2}$ 48. $(x-2)^2 + (y+1)^2 = 4$ 49. $x^2 = 1 - y^2$ 50. $(y-2)^2 + (x+3)^2 = 49$

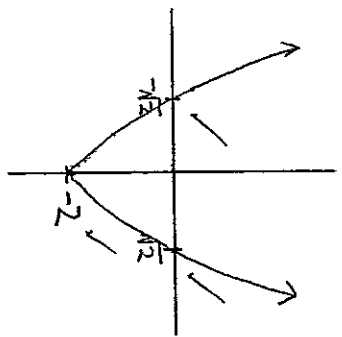
Curve Sketching Assignment

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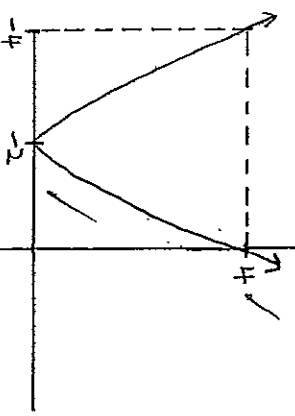
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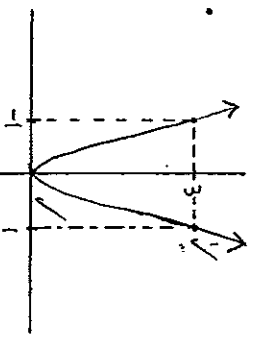
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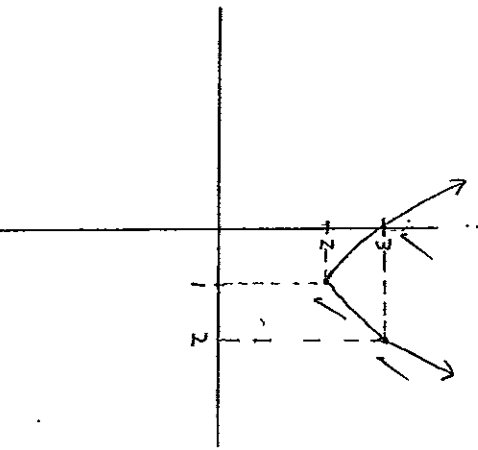
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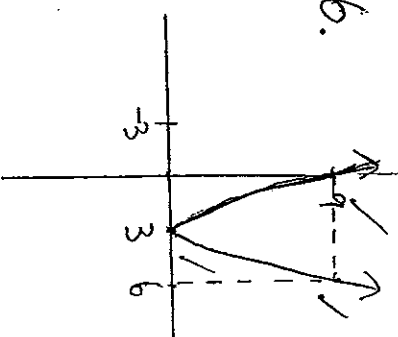
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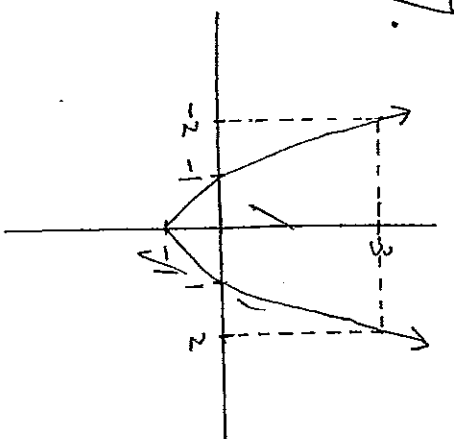
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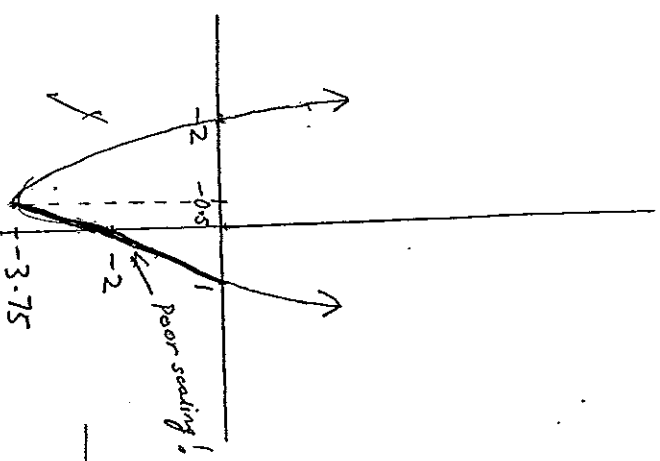
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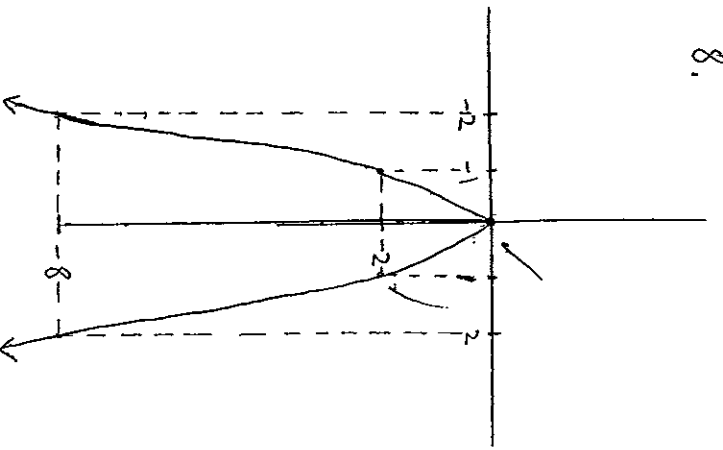
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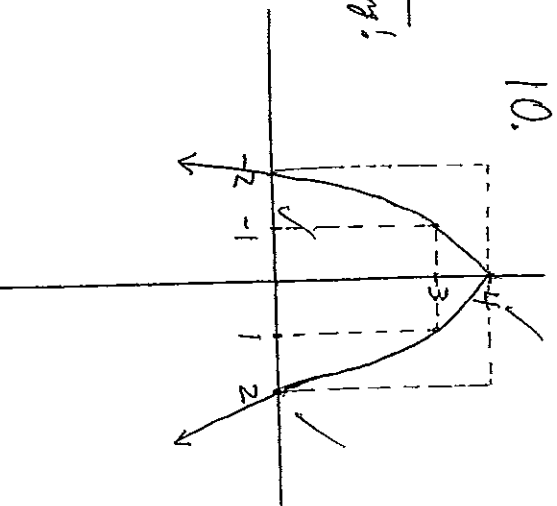
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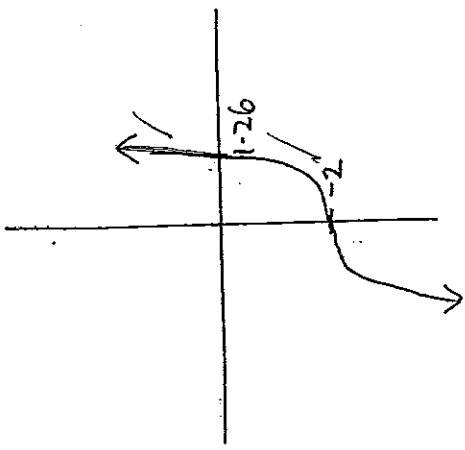
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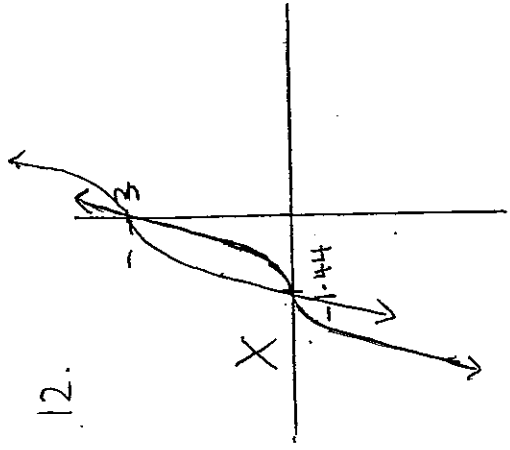
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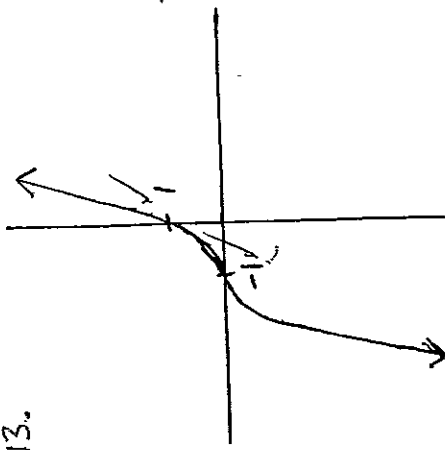
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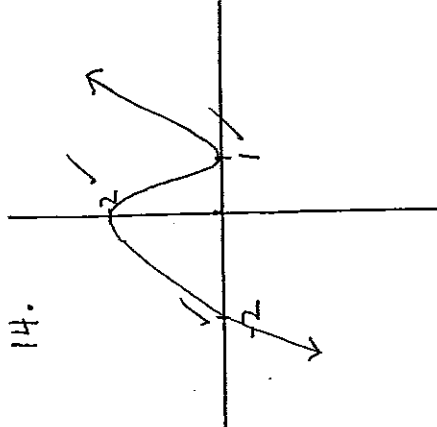
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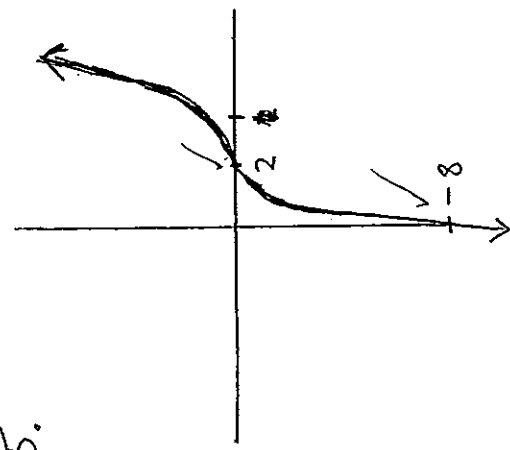
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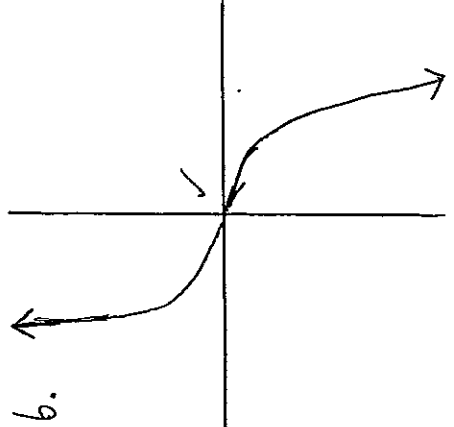
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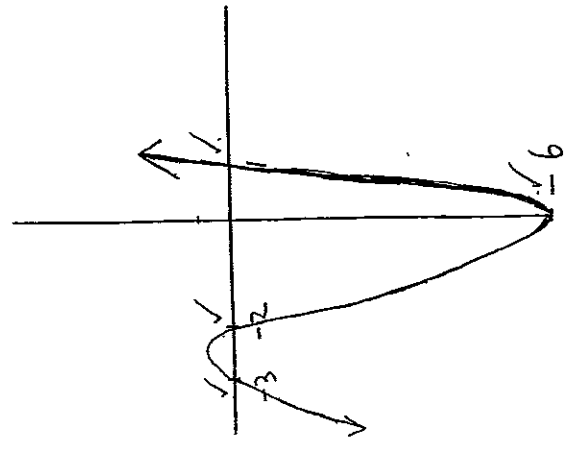
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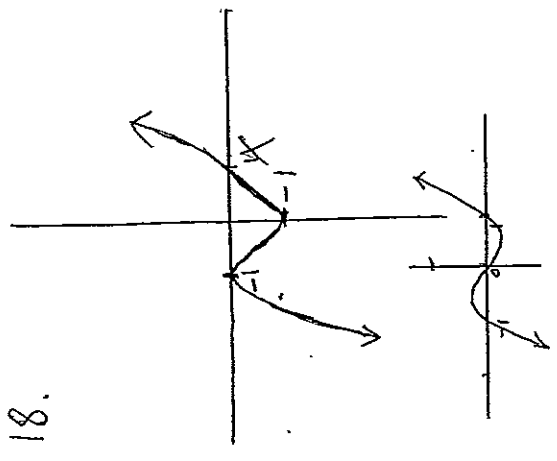
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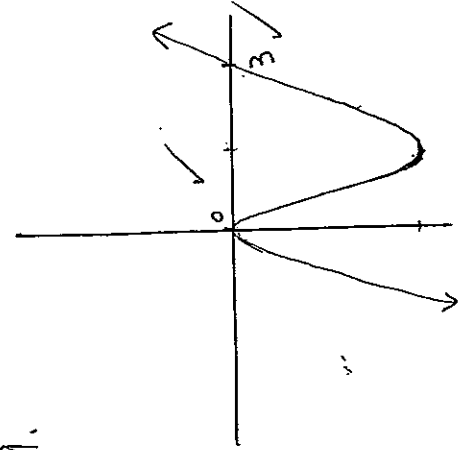
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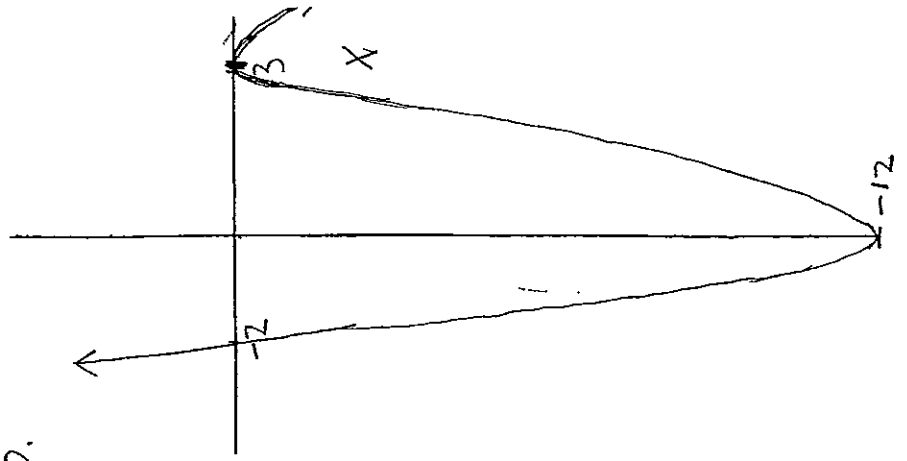
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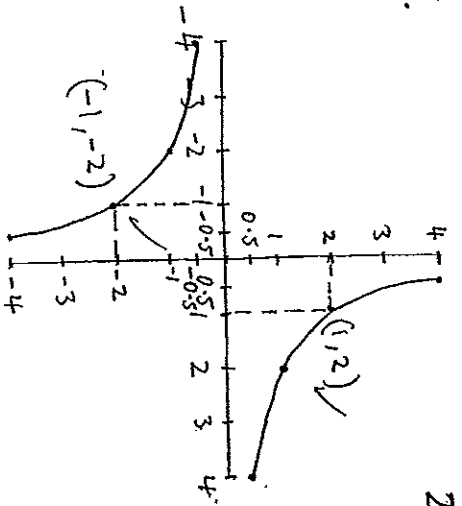


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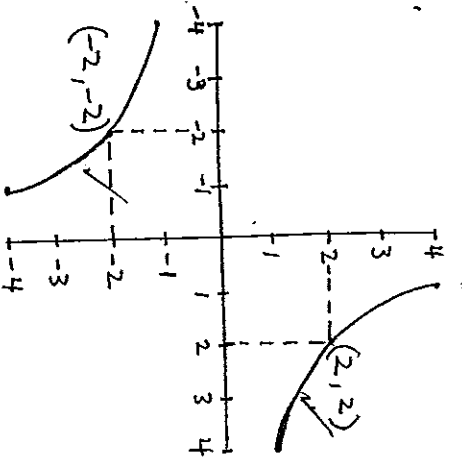


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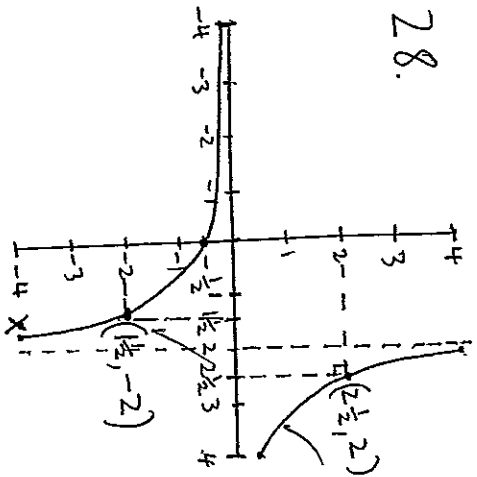
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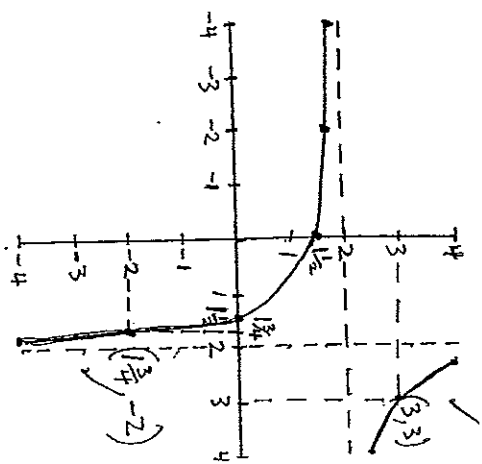
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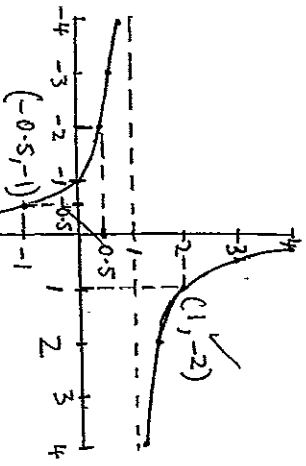
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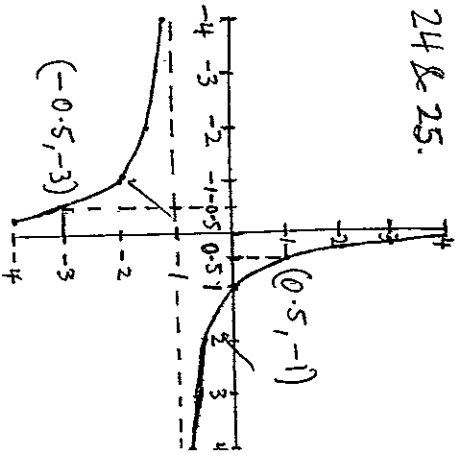
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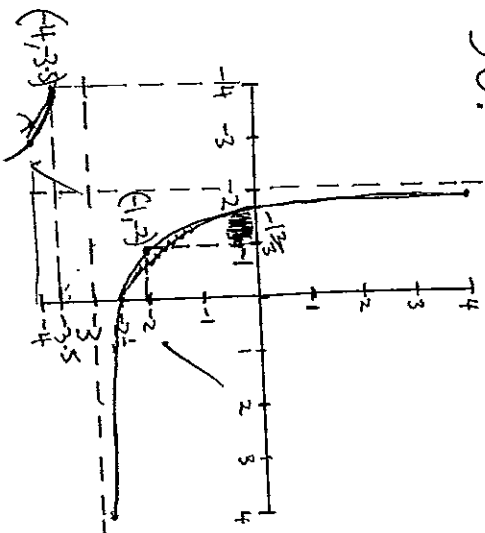
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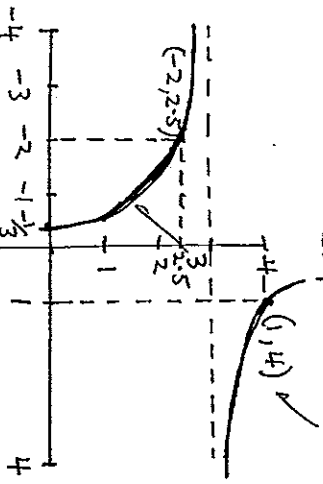
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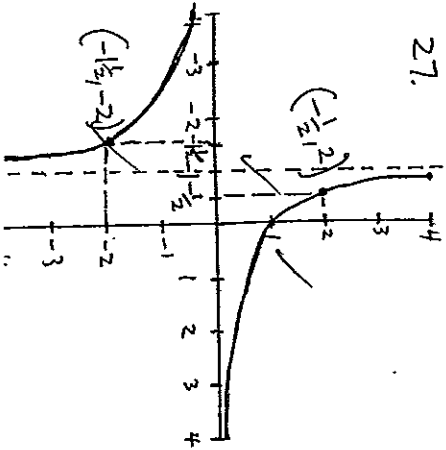
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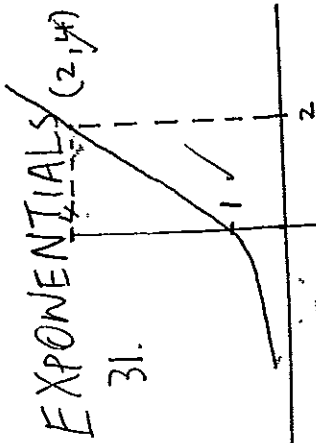


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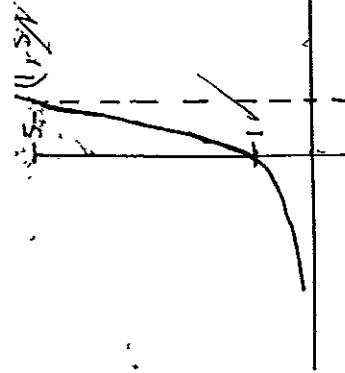


EXPONENTIALS

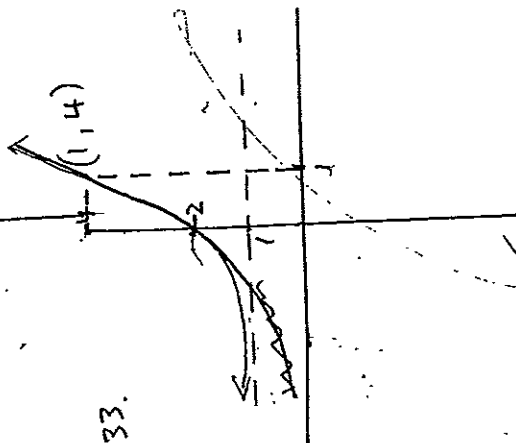
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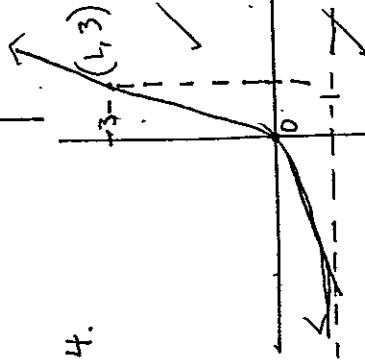
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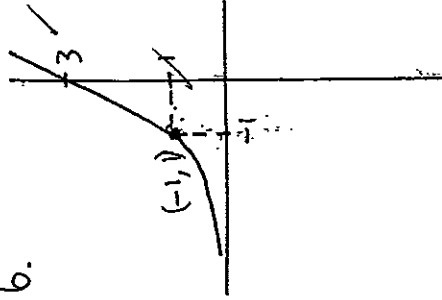
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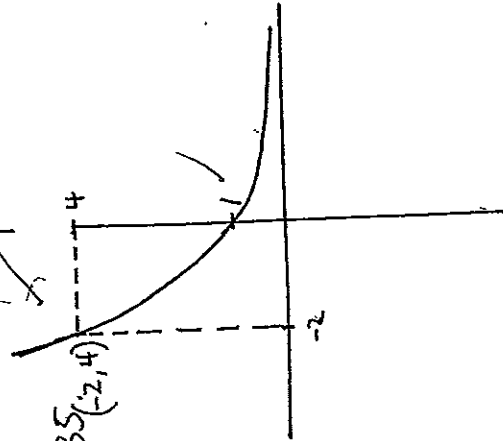
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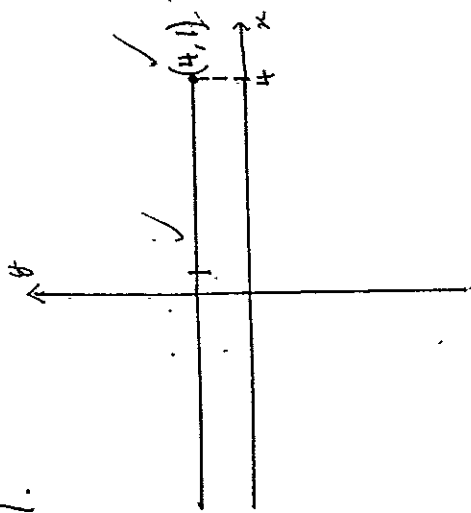
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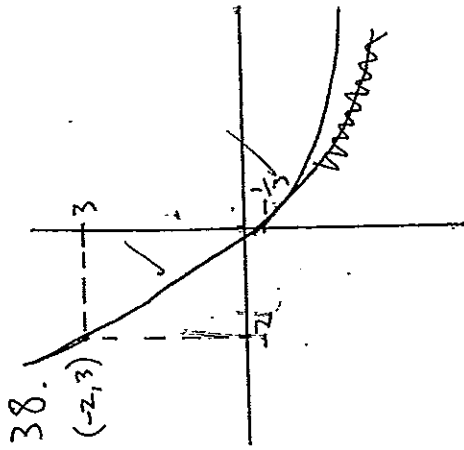
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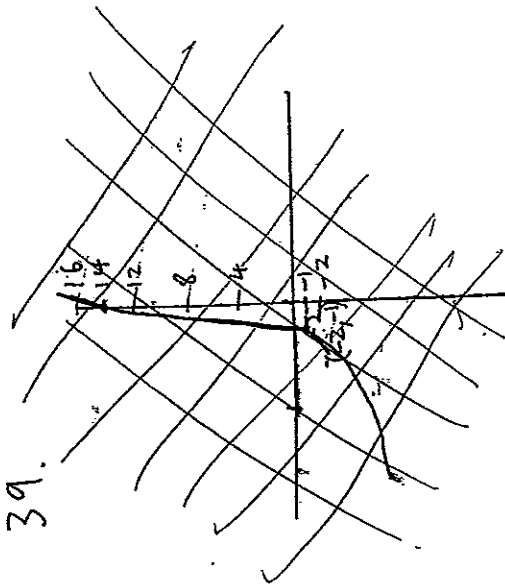
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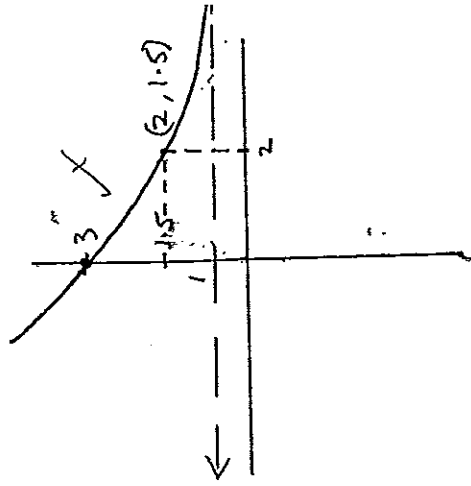
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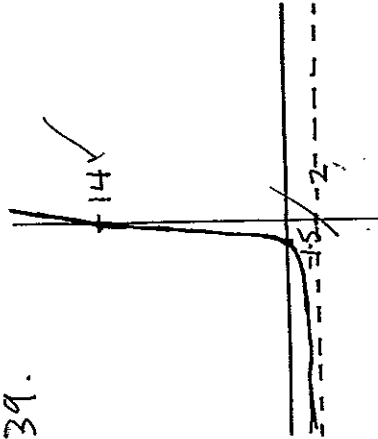
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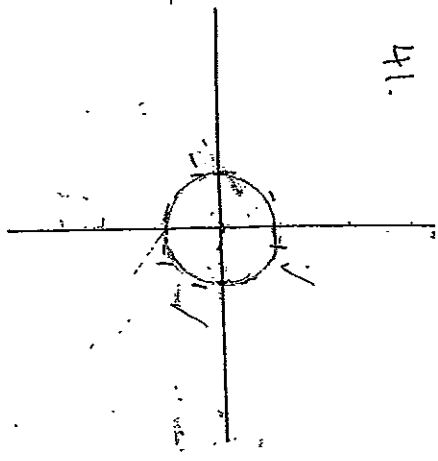
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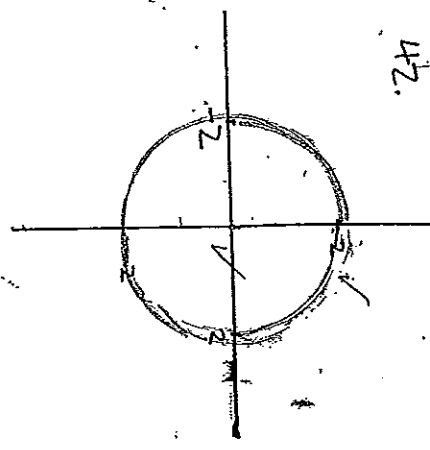
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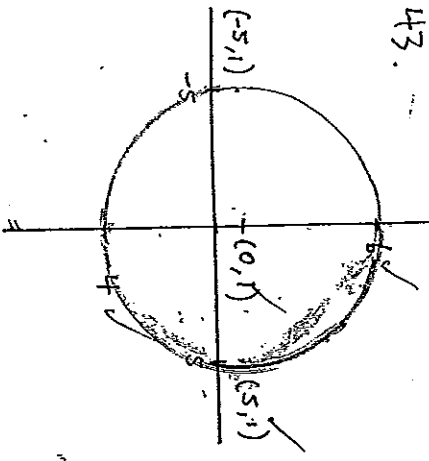
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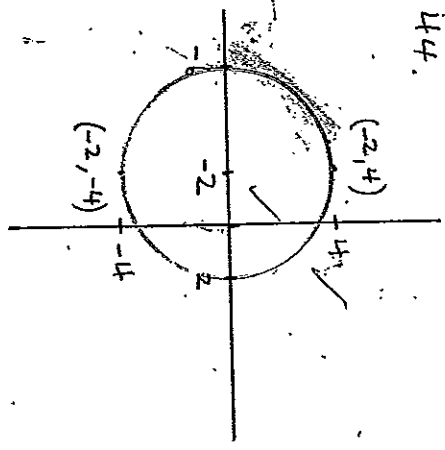
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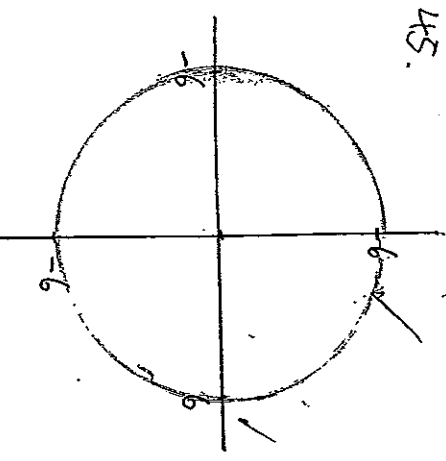
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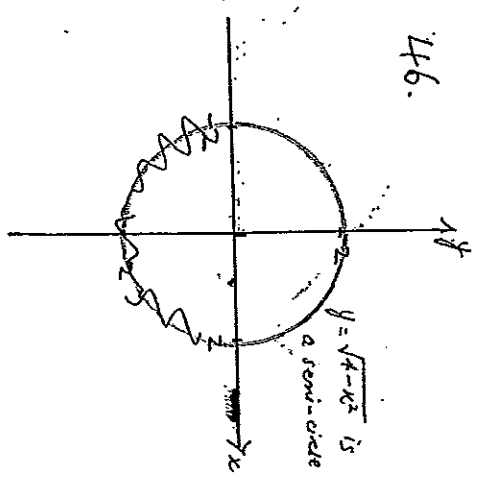
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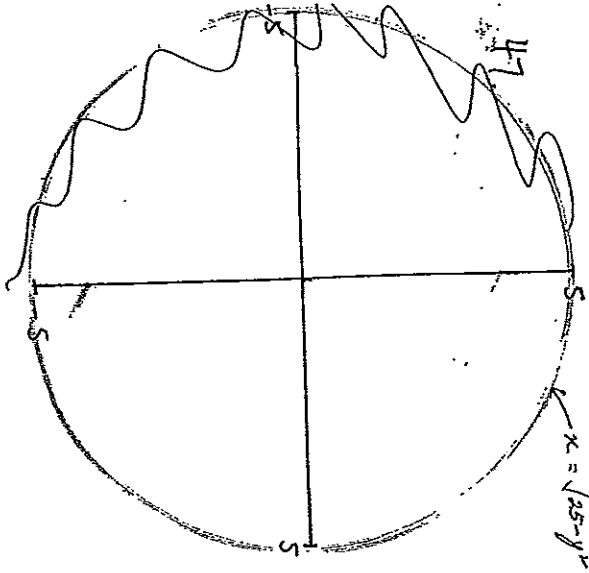
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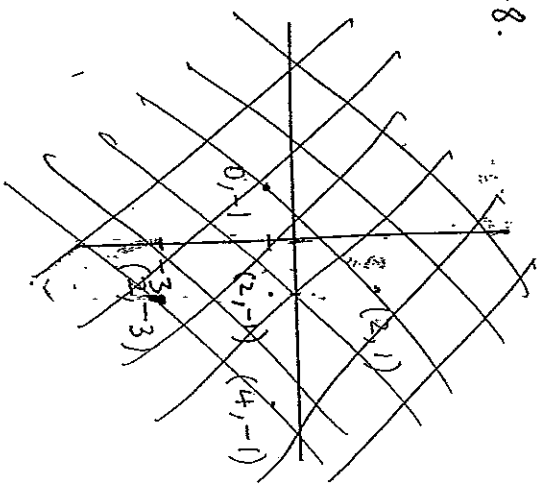
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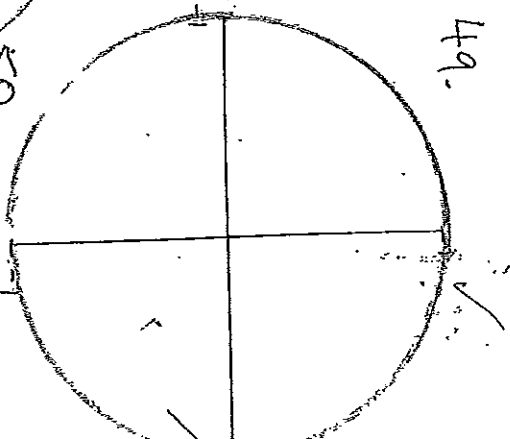
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