

Homework: Rational Zeros and Their Graphs - Key

In Problems 1-4, find the domain of each rational function

1. $x \neq \frac{-1}{4}$	2. $x \neq -3, 6$
3. $x \neq 2, 8$	4. $(-\infty, \infty)$

In Problems 5-7, use the graph of the rational function in the figure shown to complete each statement

5. ∞	6. 0
7. $-\infty$	8. 0
9. ∞	10. $-\infty$

In Problems 11-14, find the vertical asymptotes, if any, of the graph of each rational function

11. $x = 5$	12. $x = 0, x = 2$
13. $x = -5$	14. <i>None</i>

In Problems 15-18, find the horizontal asymptote, if any, of the graph of each rational function

15. $y = 0$	16. $y = \frac{7}{2}$
17. <i>None</i>	18. $y = \frac{4}{3}$

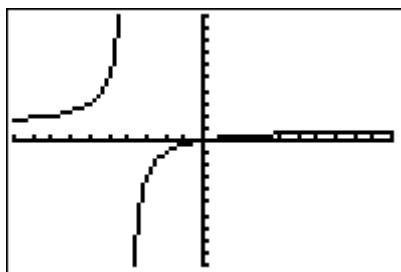
In Problems 19-24, describe the transformation(s) from the basic graph of $f(x) = \frac{1}{x}$ or $f(x) = \frac{1}{x^2}$

19. Down 2	20. Down 4
21. Up 3, right 1	22. Down 2, right 5
23. Up 3, left 2	24. Up 2, left 1

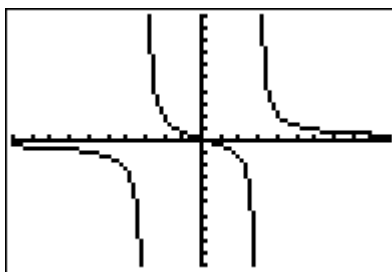
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In Problems 25-35, graph each rational function

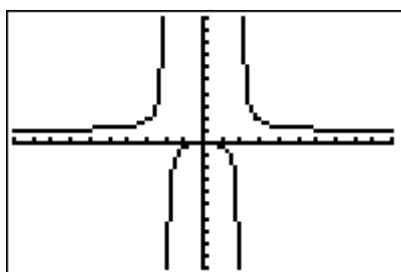
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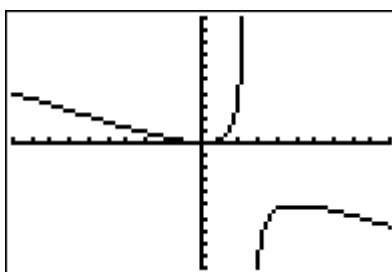
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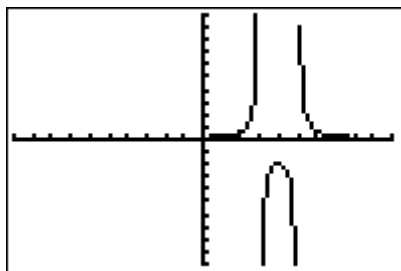
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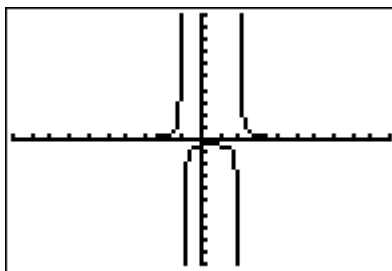
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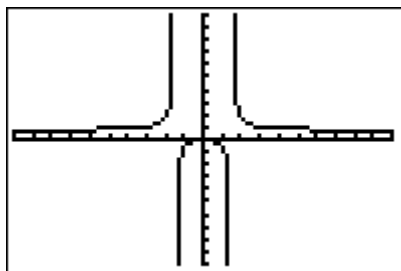
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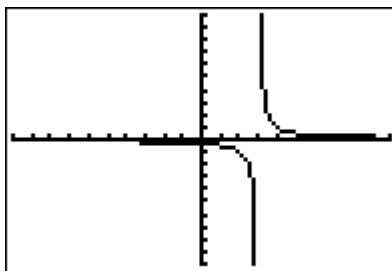
30.



31.

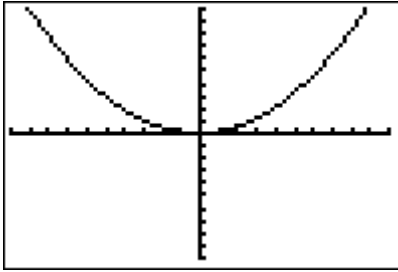


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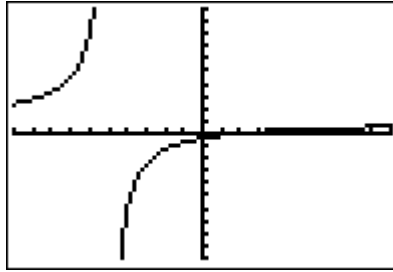


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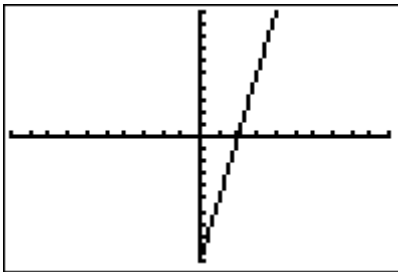
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34.

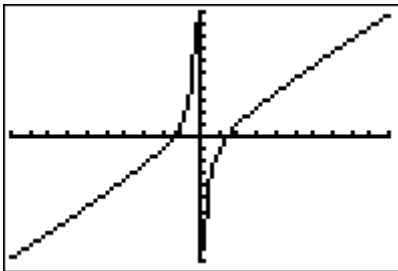


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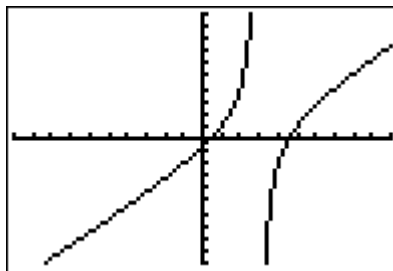


In Problems 36-39, a) find the slant asymptote and b) graph each rational function

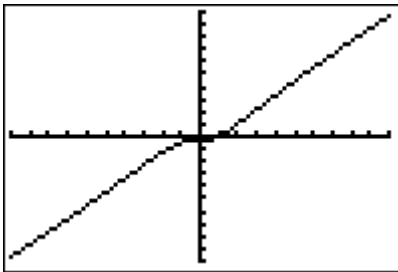
36. $y = x$



37. $y = x - 2$



38. $y = x$



39. $y = x + 2$

