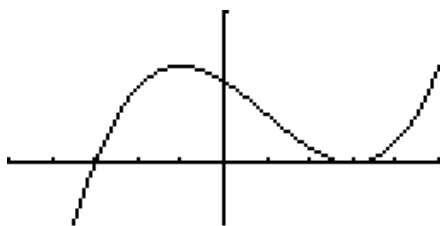
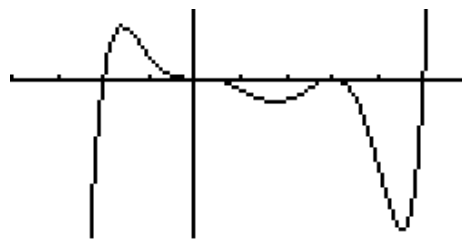


1. a.  $(-3, 3) \cup (3, \infty)$



b.  $(-2, 0) \cup (5, \infty)$



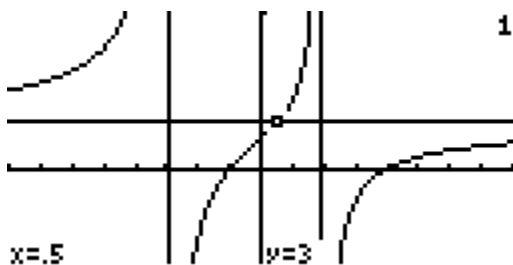
2.  $\pm 1, \pm 3, \pm 7, \pm 21, \pm \frac{1}{2}, \pm \frac{3}{2}, \pm \frac{7}{2}, \pm \frac{21}{2}$

3.  $\{2, -2, 2+i, 2-i\}$

4. a.  $f(x) = -\frac{4}{25}[(x-5)(x+2)^2] = -\frac{4}{25}x^3 + \frac{4}{25}x^2 + \frac{64}{25}x + \frac{16}{5}$

b.  $f(x) = (x+4)(x^2 - 4x + 13) = x^3 - 3x + 52$

5.



6. intercepts :  $(0, -7); (-\frac{1}{2}, 0); (-6, 0)$       hole :  $(5, \frac{847}{4})$

asymptotes : (vertical) --  $x = 3$       (oblique) --  $y = 7x + \frac{133}{2}$

7.  $f^{-1}(x) = \frac{7x}{x-3}$

8. a.  $\log_b\left(\frac{7(x+3)^5}{\sqrt{x}}\right)$

b.  $\frac{1}{3}\log_b(4x-9) - \log_b(y) - 2\log_b(z)$

9. a. 4

b.  $\frac{\log(8)}{\log(\frac{9}{2})} \approx 1.38$

10.  $2, \frac{\ln 5}{\ln 3} \approx 2.32$

11. a. \$901.86

b. 21 years