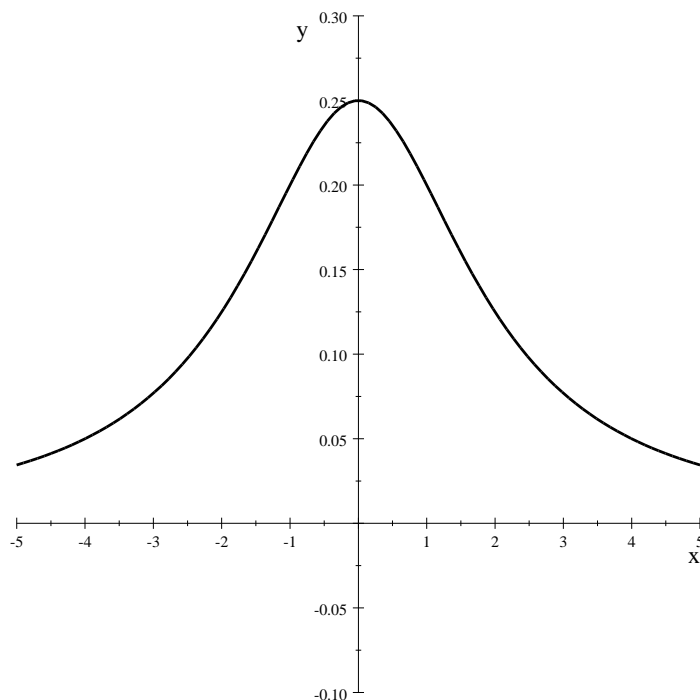


Even Answers Paper Homework 28 – 32

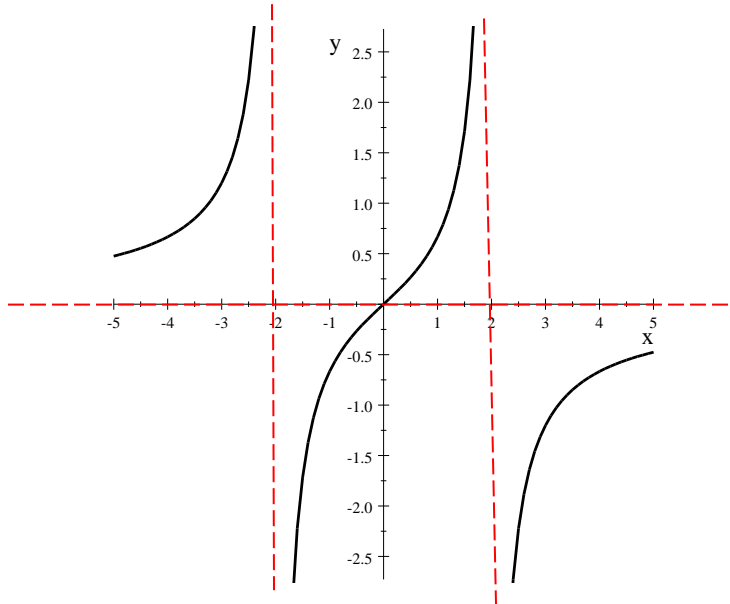
**Homework 28:**

- 18) Domain =  $(-\infty, \infty)$ , y-intercept at  $(0, \frac{1}{4})$ , no x-intercepts Symmetry about the y-axis  
 Increasing on  $(-\infty, 0)$ , Decreasing on  $(0, \infty)$ , Relative maximum at point  $(0, \frac{1}{4})$ ,  
 Concave upward on  $(-\infty, -\frac{2}{\sqrt{3}}) \cup (\frac{2}{\sqrt{3}}, \infty)$ , Concave downward on  $(-\frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}})$   
 Points of Inflection at  $(-\frac{2}{\sqrt{3}}, \frac{3}{16})$  and  $(\frac{2}{\sqrt{3}}, \frac{3}{16})$   
 Horizontal Asymptote is the line  $y = 0$  (x-axis)  
 Graph:



- 20) Domain =  $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$  x-intercept & y-intercept:  $(0, 0)$   
 Symmetry about the origin  
 Increasing:  $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$ , never decreasing No relative extrema  
 Concave upward on  $(-\infty, -2) \cup (0, 2)$  Concave downward on  $(-2, 0) \cup (2, \infty)$   
 Point of inflection:  $(0, 0)$  Vertical Asymptotes at lines  $x = -2$  &  $x = 2$   
 Horizontal Asymptote at line  $y = 0$  (x-axis)  
 (GRAPH on next page)

Graph:



**Homework 29:**

- 44) The maximum profit is \$20,000 when 100 units per week are made.  
52) The temperature that produces the maximum number of salmon is  $12^\circ$ .

**Homework 30:**

- 8) a)  $x$  = number of compact disks in thousands  $R(x) = 12000x - 125x^2$   
b) Maximum revenue occurs when 48 thousand are sold.  
c) The maximum revenue is \$288,000.  
10) The maximum area occurs when length and width are both 75 meters.

**Homework 31:**

- 16) a) 65 seats will produce maximum profit.  
b) That maximum profit is \$422.50.  
20) Dimensions are 3 ft wide by 6 ft long by 2 ft high

**Homework 32:**

There are no even bold problems.