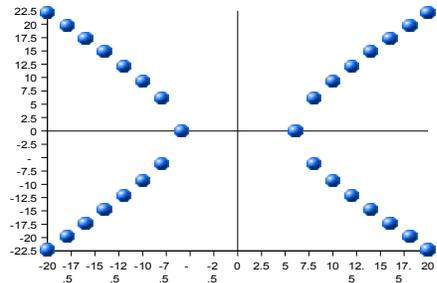MS 100 Quiz Five Name:

1. For $\dfrac{(x-6)}{(x^2+3x-18)}$:

    a. Find the y-intercept.

    b. Find the x-intercept(s).

    c. Find the vertical asymptote(s).

    d. Find the horizontal asymptote.

2. What is the name of the shape of $\dfrac{x^2}{36}+\dfrac{y^2}{324}=1$?

3. What is the name of the shape formed the points in the graph on the right:

4a.   Use the formula $(h,k)=\left(\dfrac{-b}{2a}, \dfrac{(-b^2+4ac)}{4a}\right)$

    to find the vertex (h, k) for y = −x² − 3x + 18

    b. Use the formula (h, k+p) where $p=\dfrac{1}{4a}$ to find the focus for y = −x² − 3x + 18.

    c. Using the above information along with the x-intercepts and y-intercept for y = −x² − 3x + 18, sketch a reasonably accurate graph of y = −x² − 3x + 18 on the back of this paper including the x-intercepts, y-intercept, vertex, and focus. Label the x-intercepts, y-intercept, vertex, and focus on your graph.

    d. Name a physical system that produces this shape.