

Please show **all** your work! Answers without supporting work will not be given credit.
Write answers in spaces provided.

Name: _____

1. [4 pts] Determine all the asymptotes of

$$f(x) = \frac{x^2 + 4x + 3}{x^2 - 1}$$

Vertical: $x =$ _____ **Horizontal:** $x =$ _____ **Slant:** $x =$ _____

2. [8 pts] Vann is building an open top wooden box for his kitten, Misu, who likes to play with boxes. Vann is using wood on all four sides and the bottom, and is covering the wood on the bottom with carpet.

Vann would like the bottom to have a square base. The cost of wood is \$2 per ft² and the cost of the carpet is \$ 1 per ft². Misu requires 48 ft³ to have a satisfactory play in the box. What is the minimum total cost of this box?

Cost = \$ _____