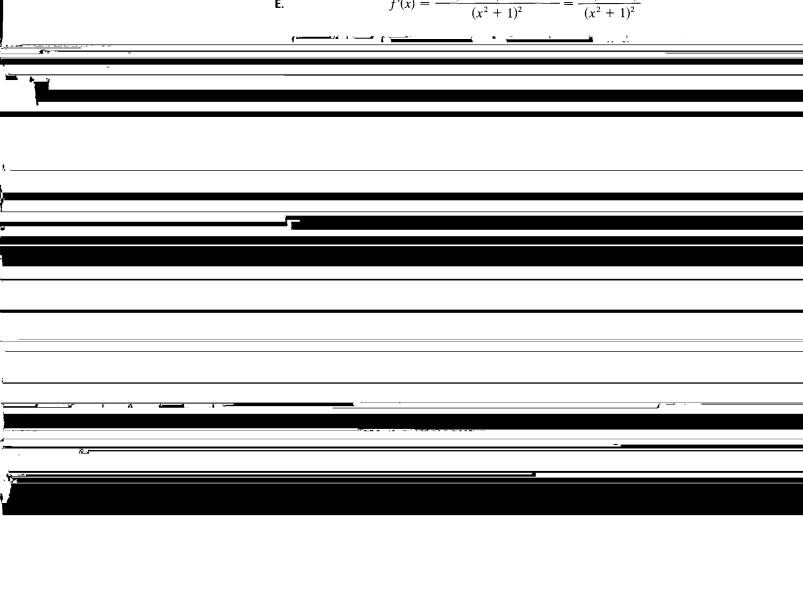
$$f(x) - x = -\frac{x}{x^2 + 1} = -\frac{\frac{1}{x}}{1 + \frac{1}{x^2}} \to 0 \text{ as } x \to \pm \infty$$

So the line y = x is a slant asymptote.

E.
$$f'(x) = \frac{3x^2(x^2+1) - x^3 \cdot 2x}{(x^2+1)^2} = \frac{x^2(x^2+3)}{(x^2+1)^2}$$



40.
$$y = \frac{\cos x}{2 + \sin x}$$

41.
$$y = 1/(1 + e^{-x})$$

$$42. \quad y = \ln(\cos x)$$

43.
$$y = x \ln x$$

$$44. \quad y = e^{x}/x$$

particle is

$$F(x) = -\frac{k}{x^2} + \frac{k}{(x-2)^2} \qquad 0 < x < 2$$

where k is a positive constant. Sketch the graph of the net force

49.
$$y = xe^{-x^2}$$

50.
$$y = e^x - 3e^{-x} - 4x$$

x

51. The figure shows a beam of length L embedded in concrete walls. If a constant load W is distributed evenly along its

53–58 Use the guidelines of this section to sketch the curve. In guideline D find an equation of the slant asymptote.

$$x^3$$

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