Slant Asymptotes

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the requested asymptote(s) of the given function.

1) $f(x) = \dfrac{24x^2 + 22x + 6}{4x + 1}$; Find the slant asymptote.

1) _____

    A) $y = 4x + 1$ B) $y = 6x$ C) $y = 6x + 6$ D) $y = 6x + 4$

2) $f(x) = \dfrac{36x^2 + 17x + 5}{4x + 1}$; Find the slant asymptote.

2) _____

    A) $y = 9x + 5$ B) $y = 9x + 2$ C) $y = 4x + 1$ D) $y = 9x$

3) $f(x) = \dfrac{8x^3 + 4x^2 + 11x + 4}{1 + x^2}$; Find the slant asymptote.
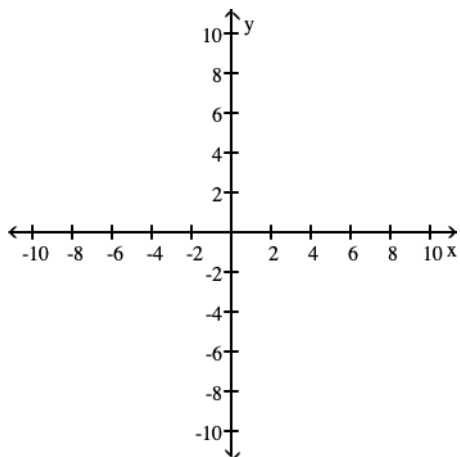
3) _____

    A) $y = 1 + x^2$ B) $y = 8x + 4$ C) $y = 8x$ D) $y = 8x + 11$

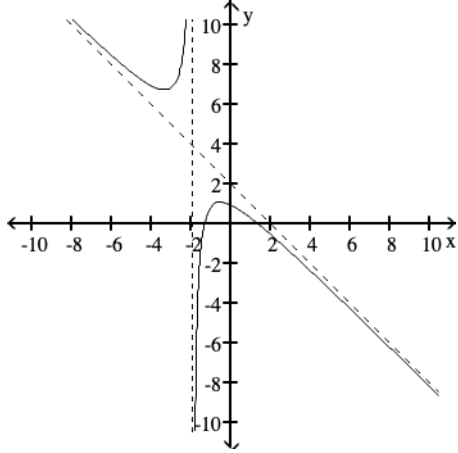4) $f(x) = \dfrac{9x^3 + 3x^2 + 13x + 3}{1 + x^2}$; Find the slant asymptote.

4) _____

    A) $y = 9x + 3$ B) $y = 9x + 13$ C) $y = 1 + x^2$ D) $y = 9x$

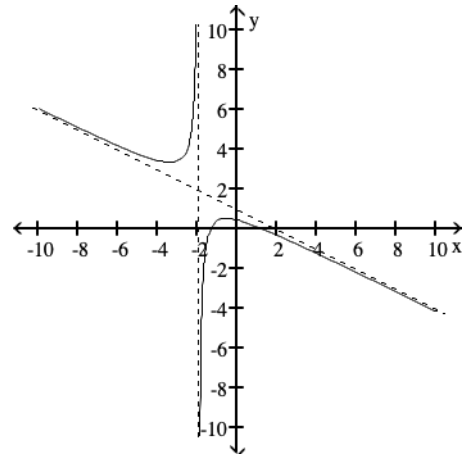**Graph the rational function. Include the graphs and equations of the asymptotes.**
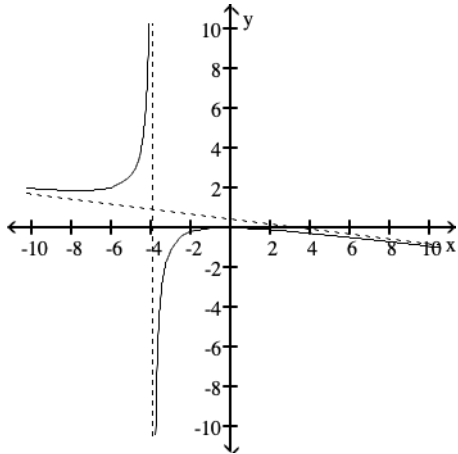
5) $y = \dfrac{2 - x^2}{2x + 4}$

5) _____

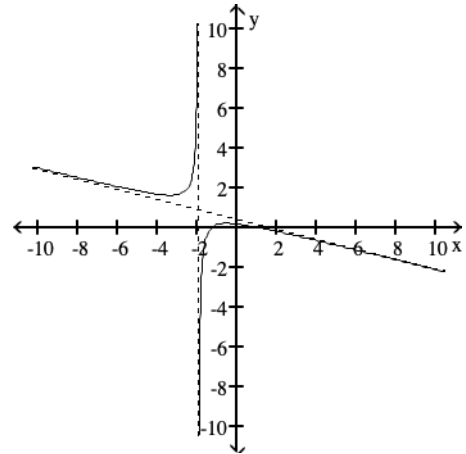A) asymptotes: x = –2, y = –x + 2

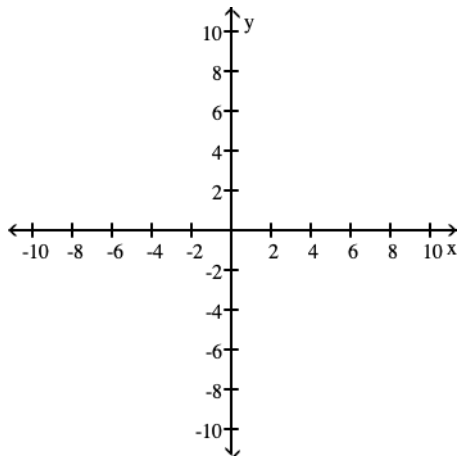B) asymptotes: $x = -2$, $y = -\dfrac{1}{2}x + 1$

C) asymptotes: $x = -4$, $y = -\dfrac{1}{8}x + \dfrac{1}{2}$

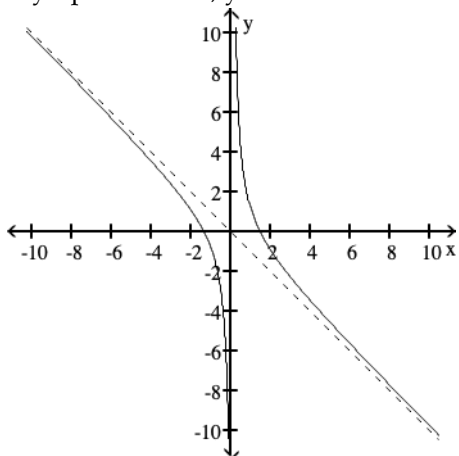D) asymptotes: $x = -2$, $y = -\dfrac{1}{4}x + \dfrac{1}{2}$
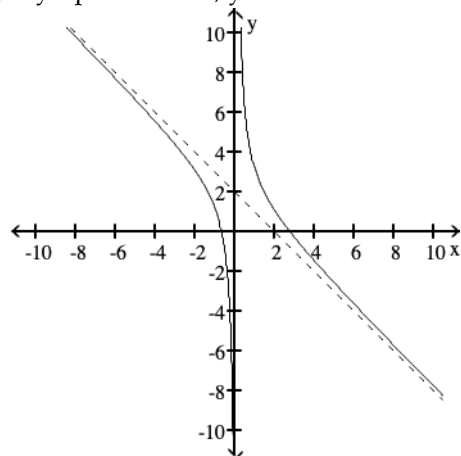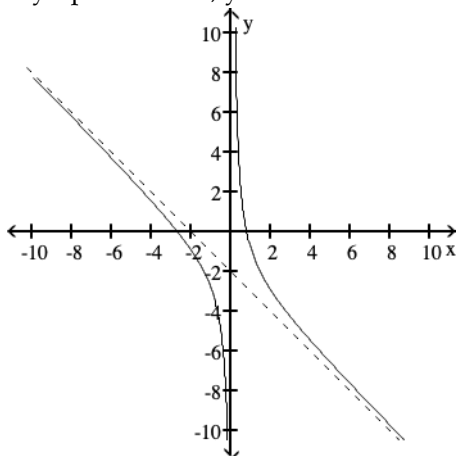

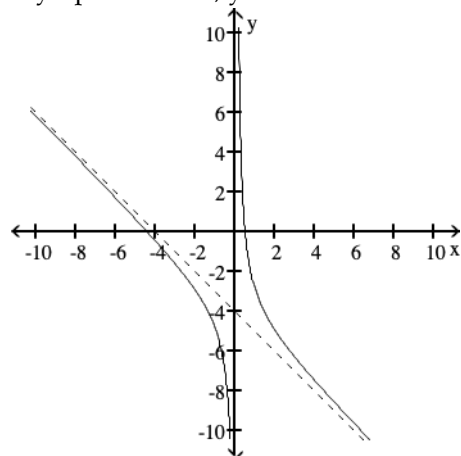6) $y = \dfrac{2 - 2x - x^2}{x}$

6) _____

2

A) asymptotes: x = 0, y = −x

B) asymptotes: x = 0, y = −x + 2

C) asymptotes: x = 0, y = −x − 2

D) asymptotes: x = 0, y = −x − 4

3

1) D
2) B
3) B
4) A
5) B
6) C