

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (181)
Recitation (3. 6)

Question 1: If $y = \frac{2}{3}$ is the horizontal asymptote of the function $y = \frac{ax - 5}{3x - 4}$ then

x-intercept of the graph is

- (a) $\frac{4}{3}$ (b) $\frac{5}{2}$ (c) $\frac{5}{4}$ (d) $\frac{3}{2}$ (e) $-\frac{1}{2}$

Answer: (b); $\frac{5}{2}$

Question 2:

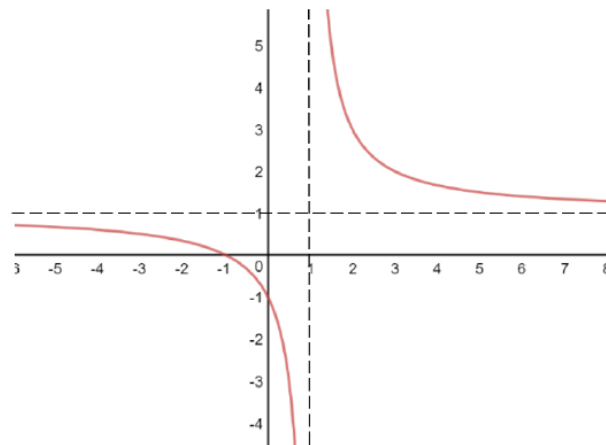
The graph of $y = \frac{x^2 + 3x - 2}{2x^2 + x + 10}$ intersects its horizontal asymptote when x is equal to

- (a) $\frac{14}{5}$ (b) $-\frac{1}{2}$ (c) $\frac{11}{5}$ (d) $-\frac{2}{5}$ (e) $\frac{19}{5}$

Answer: (a); $\frac{14}{5}$

Question 3: The following figure represents the graph of

- a. $y = \frac{x}{x-1}$
 b. $y = \frac{x+1}{x-1}$
 c. $y = \frac{x-1}{x+1}$
 d. $y = \frac{2(x+1)}{x-1}$
 e. $y = \frac{x+2}{x-1}$



Answer (b): $y = \frac{x + 1}{x - 1}$

Question 4:

The graph $y = \frac{6-ax}{5-(a-2)x}$ has a vertical asymptote $x = 5$, then it has a horizontal asymptote given by

(a) $y = \frac{1}{3}$ (b) $y = \frac{3}{2}$ (c) $y = 5$ (d) $y = \frac{6}{5}$ (e) $y = 3$

Answer: (e): $y = 3$

Question 5:

Find the slant asymptote and the vertical asymptotes of $f(x) = \frac{x^3 - 2x^2}{x^2 - 4}$

Answer:

The slant asymptote is $y = x - 2$

The vertical asymptote is $x = -2$