

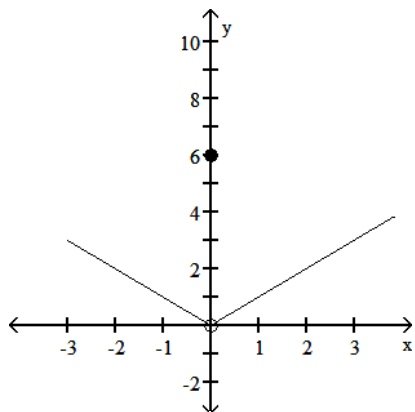
Provide an appropriate response.

1) Given that $f(x) = \frac{x}{7-x}$, find $f\left(-\frac{4}{5}\right)$. Express the answer as a simplified fraction.

Use the graph to evaluate the indicated limit and function value or state that it does not exist.

2) Find $\lim_{x \rightarrow 0} f(x)$ and $f(0)$.

2) _____



A) Does not exist; 6
 C) 6; 0

B) 0; does not exist
 D) 0; 6

Find the limit, if it exists.

3) Find: $\lim_{x \rightarrow -1} \frac{6x+5}{5x-6}$

4) Find: $\lim_{x \rightarrow -4} \frac{x^2-16}{x+4}$

5) Given $\lim_{x \rightarrow 5} f(x) = 4$ and $\lim_{x \rightarrow 5} g(x) = -5$, find $\lim_{x \rightarrow 5} \frac{2f(x) + 3g(x)}{3f(x)}$.

6) Let $f(x) = \begin{cases} \frac{x^2-16}{x+4} & \text{if } x > 0 \\ \frac{x^2-16}{x-4} & \text{if } x < 0 \end{cases}$

Find $\lim_{x \rightarrow 0^-} f(x)$.

7) Evaluate the following limit.

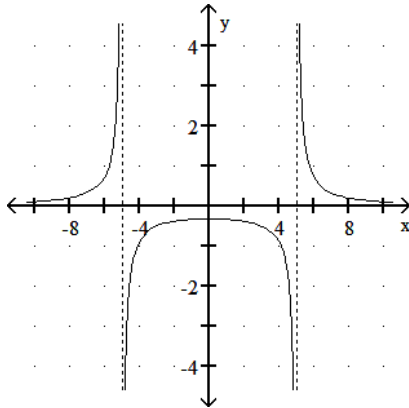
$$\lim_{x \rightarrow 2^+} \frac{1}{x-2}$$

Solve the problem.

- 8) A company training program determines that, on average, a new employee can do $P(x)$ pieces of work per day after s days of on-the-job training, where $P(x) = \frac{90 + 60x}{x + 5}$. Find $\lim_{x \rightarrow 5} P(x)$.

Use the given graph to find the indicated limit.

9)



$$\lim_{x \rightarrow 5^+} f(x)$$

Find the limit.

- 10) Determine the limit.

$$\lim_{x \rightarrow -10^-} f(x), \text{ where } f(x) = \frac{1}{x + 10}$$

Provide an appropriate response.

- 11) If the limit at infinity exists, find the limit.

$$\lim_{x \rightarrow \infty} \frac{5x^2 + 7x - 9}{-6x^2 + 2}$$

- 12) Find the vertical asymptote(s) of the graph of the given function.

$$f(x) = \frac{3x - 9}{5x + 30}$$

- 13) Find the horizontal asymptote, if any, of the given function.

$$f(x) = \frac{2x^3 - 3x - 9}{9x^3 - 5x + 3}$$

- 14) Determine where the function $H(x) = \frac{x^2 + 7}{x^2 + x - 6}$ is continuous.

Answer Key

Testname: PRACTICE05

1) $-\frac{4}{39}$

2) D

3) $\frac{1}{11}$

4) -8

5) $-\frac{7}{12}$

6) 4

7) ~~Does not exist~~ 7) Answer is "positive infinity"

8) 30

9) ∞

10) $-\infty$

11) $-\frac{5}{6}$

12) $x = -6$

13) $y = \frac{2}{9}$

14) $(-\infty, -3) \cup (-3, 2) \cup (2, \infty)$