

Find the domain of the rational function.

$$1) g(x) = \frac{7x^2}{(x-3)(x-1)}$$

1) _____

- A) $\{x \mid x \neq 3, x \neq 1, x \neq -7\}$
- C) all real numbers

- B) $\{x \mid x \neq -3, x \neq -1\}$
- D) $\{x \mid x \neq 3, x \neq 1\}$

Find the vertical asymptotes, if any, of the graph of the rational function.

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

2) _____

- A) $x = 0$ and $x = 5$
- C) $x = 5$

- B) $x = -5$ and $x = 5$
- D) no vertical asymptote

Find the horizontal asymptote, if any, of the graph of the rational function.

$$3) f(x) = \frac{10x}{5x^2 + 1}$$

3) _____

- A) $y = \frac{1}{2}$
- C) $y = 2$

- B) $y = 0$
- D) no horizontal asymptote

$$4) f(x) = \frac{8x}{8x + 7}$$

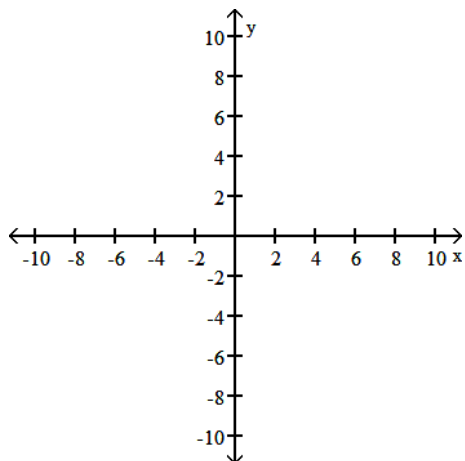
4) _____

- A) $y = 0$
- C) $y = 1$

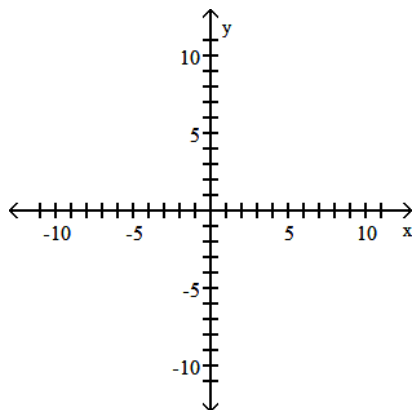
- B) $y = -\frac{7}{8}$
- D) no horizontal asymptote

Use transformations of $f(x) = \frac{1}{x}$ or $f(x) = \frac{1}{x^2}$ to graph the rational function.

$$5) h(x) = \frac{1}{x+3}$$



$$6) f(x) = \frac{1}{(x+4)^2} + 3$$



Find the slant asymptote, if any, of the graph of the rational function.

$$7) f(x) = \frac{x^2 + 5x - 3}{x - 4}$$

7) _____

A) $y = x + 5$

B) $y = x + 9$

C) $y = x$

D) no slant asymptote

Graph the rational function.

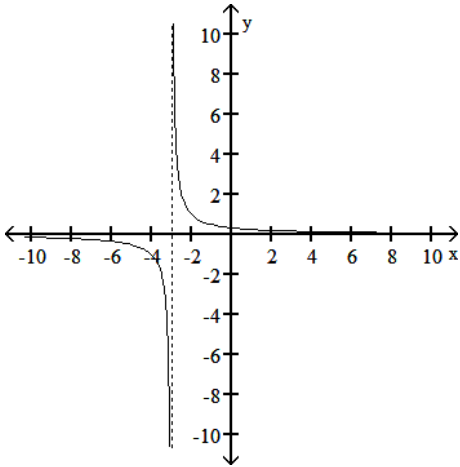
$$8) f(x) = \frac{2x}{x - 1}$$

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

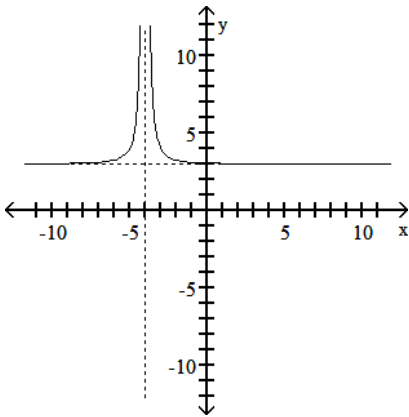
Answer Key

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

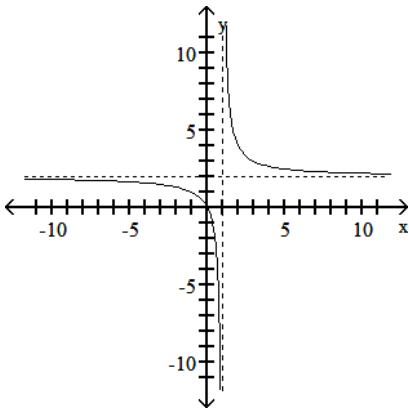


6)



7) B

8)



Answer Key

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9)

