

Algebra II Practice Quiz 8.4**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

_____ 1. (10 points) Identify each:
the horizontal asymptote

the vertical asymptote

the domain

the range

of the function $g(x) = \frac{1}{x+2} - 1$.

A) Vertical asymptote: $x = -2$
Domain: $\{x|x \neq -2\}$
Horizontal asymptote: $y = 1$
Range: $\{y|y \neq 1\}$

B) Vertical asymptote: $x = -2$
Domain: $\{x|x \neq -2\}$
Horizontal asymptote: $y = -1$
Range: $\{y|y \neq -1\}$

C) Vertical asymptote: $x = 2$
Domain: $\{x|x \neq 2\}$
Horizontal asymptote: $y = 1$
Range: $\{y|y \neq 1\}$

D) Vertical asymptote: $x = 2$
Domain: $\{x|x \neq 2\}$
Horizontal asymptote: $y = -1$
Range: $\{y|y \neq -1\}$

_____ 2. (10 points) Identify the zeros and vertical asymptotes of $g(x) = \frac{x^2 + 5x + 4}{x + 2}$. Be sure to factor the numerator first!!!

A) Zeros at -4 and -1 .
Vertical asymptote: $x = 2$

C) Zeros at 4 and 1 .
Vertical asymptote: $x = 2$

B) Zeros at -4 and -1 .
Vertical asymptote: $x = -2$

D) Zeros at 4 and 1 .
Vertical asymptote: $x = -2$

_____ 3. (10 points) Starting with $f(x) = \frac{1}{x}$ describe the transformation shown in the function $g(x) = \frac{1}{x} + 2$.

- A) Translate $f(x)$ left 2 units.
- B) Translate $f(x)$ down 2 units.
- C) Translate $f(x)$ up 2 units.
- D) Translate $f(x)$ right 2 units.

_____ 4. (10 points) Identify the zeros and vertical asymptotes of $g(x) = \frac{x^2 - 4x + 3}{x + 2}$. Be sure to factor the numerator first!!!

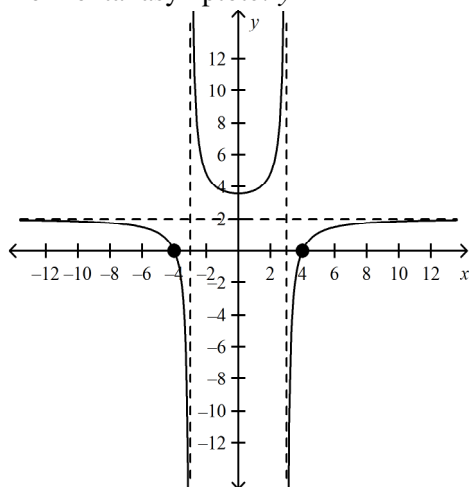
- | | |
|---|--|
| A) Zeros at -3 and -1 .
Vertical asymptote: $x = -2$ | C) Zeros at -3 and -1 .
Vertical asymptote: $x = 2$ |
| B) Zeros at 3 and 1 .
Vertical asymptote: $x = -2$ | D) Zeros at 3 and 1 .
Vertical asymptote: $x = 2$ |

_____ 5. (1 point) Identify the zeros and asymptotes of $f(x) = \frac{2x^2 - 18}{x^2 - 16}$. Then graph.

A) Zeros: -4 and 4

Vertical asymptotes: $x = -3, x = 3$

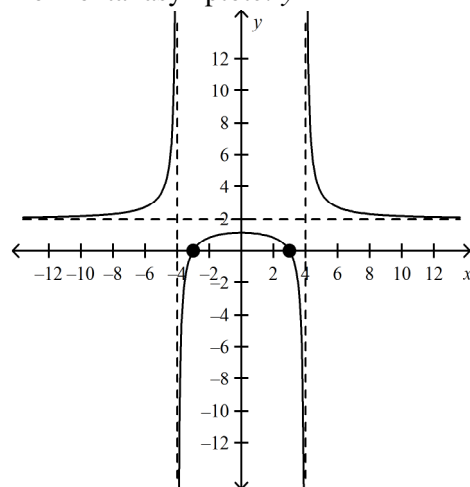
Horizontal asymptote: $y = 2$



C) Zeros: -3 and 3

Vertical asymptotes: $x = -4, x = 4$

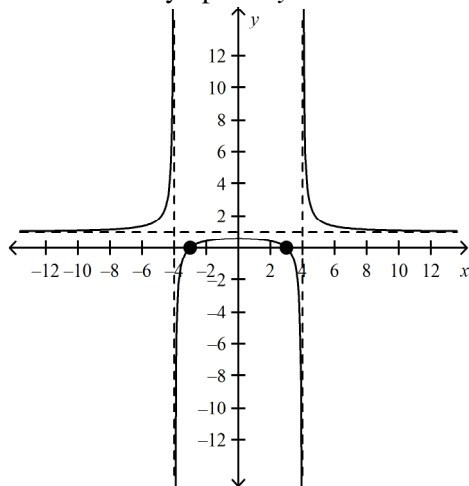
Horizontal asymptote: $y = 2$



B) Zeros: -3 and 3

Vertical asymptotes: $x = -4, x = 4$

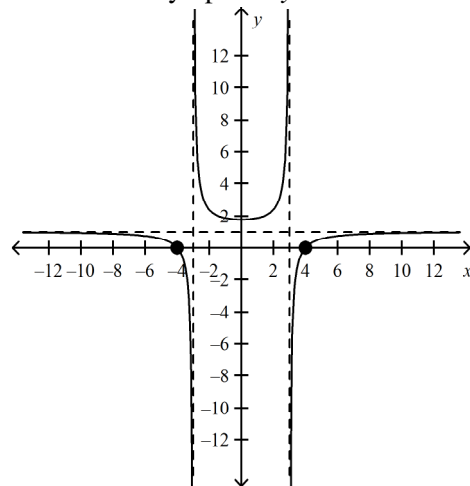
Horizontal asymptote: $y = 1$



D) Zeros: -4 and 4

Vertical asymptotes: $x = -3, x = 3$

Horizontal asymptote: $y = 1$



- _____ 6. (10 points) Identify each:
- the horizontal asymptote
 - the vertical asymptote
 - the domain
 - the range

of the function $g(x) = \frac{1}{x+4} - 3$.

- | | |
|--|--|
| A) Vertical asymptote: $x = -4$
Domain: $\{x x \neq -4\}$
Horizontal asymptote: $y = 3$
Range: $\{y y \neq 3\}$ | C) Vertical asymptote: $x = 4$
Domain: $\{x x \neq 4\}$
Horizontal asymptote: $y = 3$
Range: $\{y y \neq 3\}$ |
| B) Vertical asymptote: $x = 4$
Domain: $\{x x \neq 4\}$
Horizontal asymptote: $y = -3$
Range: $\{y y \neq -3\}$ | D) Vertical asymptote: $x = -4$
Domain: $\{x x \neq -4\}$
Horizontal asymptote: $y = -3$
Range: $\{y y \neq -3\}$ |

- _____ 7. (5 points) Identify holes in the graph of $f(x) = \frac{x^2 - 9x + 18}{x - 6}$. Be sure to factor first!

- A) There is a hole in the graph at $x = 3$.
- B) There is a hole in the graph at $x = 6$.
- C) There are no holes in the graph.
- D) There is a hole in the graph at $x = -6$.

Name: _____

ID: A

- _____ 8. (10 points) Starting with $f(x) = \frac{1}{x}$ describe the transformation shown in the function $g(x) = \frac{1}{x} - 1$.
- A) Translate $f(x)$ left 1 unit.
 - B) Translate $f(x)$ down 1 unit.
 - C) Translate $f(x)$ up 1 unit.
 - D) Translate $f(x)$ right 1 unit.

Algebra II Practice Quiz 8.4

Answer Section

MULTIPLE CHOICE

- | | | |
|-----------|---------|---------------|
| 1. ANS: B | PTS: 10 | REF: Page 593 |
| 2. ANS: B | PTS: 10 | REF: Page 594 |
| 3. ANS: C | PTS: 10 | REF: Page 592 |
| 4. ANS: B | PTS: 10 | REF: Page 594 |
| 5. ANS: C | PTS: 1 | REF: Page 595 |
| 6. ANS: D | PTS: 10 | REF: Page 593 |
| 7. ANS: B | PTS: 5 | REF: Page 596 |
| 8. ANS: B | PTS: 10 | REF: Page 592 |