

Unit 3: Rational Functions and Equations

PRACTICE

Name: _____ Date: _____

Solve each problem and write your exact answer (a number, fraction, coordinate pair, or equation) on the line provided. Simplify all fractions.

1. Find the vertical asymptote of $f(x) = 1/(x - 4)$. Give your answer as an equation of the form $x = a$.

Answer: _____

2. Find the horizontal asymptote of $f(x) = (3x + 1)/(x - 2)$. Give your answer as an equation of the form $y = a$.

Answer: _____

3. Find the horizontal asymptote of $f(x) = (2x)/(x^2 + 1)$. Give your answer as an equation of the form $y = a$.

Answer: _____

4. The function $f(x) = (x + 1)/(x - 7)$ is undefined at exactly one value of x . What is that value?

Answer: _____

5. Solve for x : $3/x = 6$.

Answer: _____

6. Solve for x : $5/(x + 1) = 1$.

Answer: _____

7. Find the y -intercept of $f(x) = (x + 6)/(x + 3)$. Give your answer as a coordinate pair.

Answer: _____

8. Find the x -intercept of $f(x) = (2x - 8)/(x + 5)$. Give your answer as a coordinate pair.

Answer: _____

9. The function $f(x) = (x^2 - 9)/(x - 3)$ has a hole (removable discontinuity). What is the x -coordinate of the hole?

Answer: _____

10. Solve for x : $2/(x - 3) = 4/(x - 1)$.

Answer: _____

11. Evaluate $f(3)$ for $f(x) = (x^2 - 1)/(x + 2)$.

Answer: _____

12. Solve for x : $x/(x - 2) = 3$.

Answer: _____