

Name: _____

Evaluating Rational Functions

Sheet 1

A) Evaluate each function at the specified value.

1) $f(x) = \frac{7}{2x - 4}$; $x = -2$

2) $f(x) = \frac{x - 6}{x + 4}$; $x = 1$

B) Evaluate each function.

1) $f(x) = \frac{x^2 - 8x}{3x + 15}$; find $f(10)$

2) $f(x) = \frac{3}{9x^2 - 7}$; find $f(0)$

C) If $f(x) = \frac{10x}{-x - 5}$; find the following.

1) $f(-8) =$ _____

2) $f(3) =$ _____

3) $f(9) =$ _____

4) $f(-7) =$ _____

D) If $f(x) = \frac{x + 1}{(x - 2)(x + 3)}$; find the following.

1) $4f(-2) + 8f(-4) =$ _____

2) $-5f(7) - 9f(-1) =$ _____

3) $\frac{-6f(-6)}{f(5)} =$ _____

4) $7f(4) \times 3f(0) =$ _____

E) What is the value of $f(-3)$, if $f(x) = \frac{9}{x^2 + 6}$?

i) $\frac{3}{5}$

ii) $-\frac{3}{5}$

iii) -9

iv) 3

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1) $f(x) = \frac{7}{2x-4}$; $x = -2$

$$\underline{-\frac{7}{8}}$$

2) $f(x) = \frac{x-6}{x+4}$; $x = 1$

$$\underline{-1}$$

B) Evaluate each function.

1) $f(x) = \frac{x^2-8x}{3x+15}$; find $f(10)$

$$\underline{\frac{4}{9}}$$

2) $f(x) = \frac{3}{9x^2-7}$; find $f(0)$

$$\underline{-\frac{3}{7}}$$

C) If $f(x) = \frac{10x}{-x-5}$; find the following.

1) $f(-8) = \underline{-\frac{80}{3} \text{ or } -26\frac{2}{3}}$

2) $f(3) = \underline{-\frac{15}{4} \text{ or } -3\frac{3}{4}}$

3) $f(9) = \underline{-\frac{45}{7} \text{ or } -6\frac{3}{7}}$

4) $f(-7) = \underline{-35}$

D) If $f(x) = \frac{x+1}{(x-2)(x+3)}$; find the following.

1) $4f(-2) + 8f(-4) = \underline{-3}$

2) $-5f(7) - 9f(-1) = \underline{-\frac{4}{5}}$

3) $\frac{-6f(-6)}{f(5)} = \underline{5}$

4) $7f(4) \times 3f(0) = \underline{-\frac{5}{4} \text{ or } -1\frac{1}{4}}$

E) What is the value of $f(-3)$, if $f(x) = \frac{9}{x^2+6}$?

i) $\frac{3}{5}$

ii) $-\frac{3}{5}$

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