

## Practice Test for Rational Functions Unit

### Learning Objectives:

- A. Find the quotient of monomials.
- B. Simplify expressions with negative exponents.
- C. Graph rational functions using transformations.
- D. Identify the asymptotes, domain, range and intercepts of a rational function.
- E. Model a scenario using rational functions.
- F. Simplify rational expressions.
- G. Solve an equation with rational coefficients.
- H. Solve rational equations.

Question #	Learning Objective	Know It	Feel Unsure		Right	Wrong	Simple Mistake	Need to Study
1	A							
2	B							
3	C							
4	D							
5	D							
6	E							
7	F							
8	H							
9	I							

1.  $\frac{m^4}{4n^3} \cdot \left(\frac{2n}{m^3}\right)^3$

2.  $\frac{(p^2q)^{-1}}{p^2q^{-1}}$

3. Graph:  $f(x) = -\frac{1}{x+2} - 3$

4. Identify the domain, range and intercepts of the function in #3.

5. Write a rational function that has no y-intercepts and exists only in the first and second quadrants.

6. To attend a power lifting class, you must pay \$100 per year plus \$3 per class.

a) What is the average cost per class if you attend 10 classes?

b) What is the average cost per class if you attend 50 classes?

c) Write a function that find the average cost C give classes attended x.

d) What is the domain of this function and what does it say about the scenario?

e) Another power lifting class offers classes for \$6 each with no annual fee. Is this a better deal? Explain your reasoning.

7. Simplify  $\frac{y^2-4}{y^2+y-6}$

8. Solve:  $\frac{x+1}{6} = x - \frac{3x-2}{4}$

9. Solve:  $\frac{2}{x+2} + \frac{x^2}{x^2-4} = \frac{1}{x-2}$