PEP Grade 8 Math — Unit 15: Algebraic Fractions • Unit Test (Basic)

PEP · Grade 8 · Term 1 · Mathematics · Unit Test · Basic

AI-generated practice paper · original study aid, not an official examination paper · 40 questions · 100 points

Name: _____ Date: _____ Score: _____

Answer all questions. This paper is worth 100 points. Show your working where appropriate.

I. Multiple Choice

1. Which of the following is a rational expression?
   A. x^2 + 3x - 5
   B. [[frac:x+1]]/√(2)
   C. [[frac:3x-2]]/[x^2+1]
   D. π

2. What is the value of [[frac:2x-4]]/[x-2] when x = 3?
   A. 1
   B. 2
   C. 3
   D. 4

3. Simplify [[frac:6a^2b]]/[9ab^2].
   A. [[frac:2a]]/[3b]
   B. [[frac:2b]]/[3a]
   C. [[frac:3a]]/[2b]
   D. [[frac:3b]]/[2a]

4. For which value of x is [[frac:5]]/[x-4] undefined?
   A. 0
   B. 4
   C. 5
   D. 6

5. Which expression is equivalent to [[frac:1]]/[x^2-9]?
   A. [[frac:1]]/[(x-3)(x+3)]
   B. [[frac:1]]/[(x-3)^2]
   C. [[frac:1]]/[(x+3)^2]
   D. [[frac:1]]/[x(x-9)]

6. Simplify [[frac:3x+6]]/[x^2+2x].
   A. [[frac:3]]/[x]
   B. [[frac:3]]/[x+2]
   C. [[frac:3]]/[x^2]
   D. [[frac:3x]]/[x+2]

7. What is the least common denominator of [[frac:1]]/[x-1] and [[frac:2]]/[x^2-1]?
   A. x-1
   B. x+1
   C. (x-1)(x+1)
   D. x^2-1

8. Which of the following operations will result in a rational expression?
   A. Adding two irrational numbers
   B. Multiplying two rational expressions
   C. Dividing a polynomial by a non-polynomial
   D. Taking square root of a constant

9. If [[frac:2x-1]]/[x+4] = 3, what is the value of x?
   A. 5
   B. 6
   C. 7
   D. 8

10. Which expression is NOT defined when x = -2?