Unit 5: Rational Expressions and Equations Final Review Assignment

Final Review Assignment

This assignment includes multiple choice and short answer questions. For multiple choice questions, select the best answer. Each is worth 1 mark. Marks assigned to short answer questions are indicated for each question. Be sure to show all necessary work.

(1) _____ 1. The non-permissible value(s) for the rational expression $\frac{2x^2 - x - 1}{4x^2 - 3x - 1}$ is/are

A. $-\frac{1}{4}$

B. $-\frac{1}{2}$

C. 1

D. All of the above

E. Both A and C

(1) _____ 2. The simplified form of the rational expression $\frac{3a^3 + 3a^2 - 36a}{a^3 + 2a^2 - 15a}$ is

A. $\frac{3(a+4)}{a+5}, a \neq 0, 3, -5$

B. $\frac{3(a+4)}{a+5}, a \neq -5$

C. $\frac{3a(a+4)}{a+5}, a \neq 0, 3, -5$

D. $\frac{3a(a+4)}{a+5}, a \neq -5$

(1)_____ 3. The simplified form of the rational expression $\frac{4x}{3x^2-7x+4}+\frac{3x+2}{x^2-4x+3}$ is

A. $\frac{7x+2}{(4x-7)(x-1)}, x \neq \frac{4}{3}, 1, 3$

B. $\frac{x-2}{(2x-1)(x-1)}, x \neq \frac{4}{3}, 1, 3$

C. $\frac{13x^2-18x-8}{(3x-4)(x-1)(x-3)}, x \neq \frac{4}{3}, 1, 3$

D. $\frac{-5x^2-6x+8}{(3x-4)(x-1)(x-3)}, x \neq \frac{4}{3}, 1, 3$

(1)_____ 4. The simplified form of the rational expression $\frac{3x^2+x-2}{2x^2-9x-5} \bullet \frac{3x^2-14x-5}{x^2-1} \div \frac{9x^2-3x-2}{2x^2-7x-4}$ is

A. $\frac{(x-4)(3x-1)}{(x-1)(2x+1)}, x \neq -\frac{1}{2}, -\frac{1}{3}, \pm 1, \frac{2}{3}, 4, 5$

B. $\frac{x-4}{x-1}, x \neq -\frac{1}{2}, -\frac{1}{3}, \pm 1, \frac{2}{3}, 4, 5$

C. $\frac{(3x-2)(3x-1)}{(2x+1)(x-1)(x-4)}, x \neq -\frac{1}{2}, -\frac{1}{3}, \pm 1, \frac{2}{3}, 4, 5$

D. $\frac{(3x-2)^2(3x-1)^2}{(2x+1)^2(x-1)(x-4)}, x \neq -\frac{1}{2}, -\frac{1}{3}, \pm 1, \frac{2}{3}, 4, 5$

(3) 5. Simplify the rational expression $\frac{x-5}{x-7} - \frac{x^2-6x+8}{x^2+8x+7} \bullet \frac{x^2+3x+2}{x^2-11x+28}$. Identify any non-permissible values. Show all work.

(2) 6. Using an example, explain why non-permissible values must be noted before simplifying rational expressions and equations.

(4) 7. Hannah and Jenna are both travelling to a volleyball tournament in Grande Prairie, and leave at the same time. Hannah's parents drive her from Edmonton to Grande Prairie, a distance of 460 km. Jenna's team takes a bus from Dawson Creek, BC to Grande Prairie, a distance of 130 km. Hannah's parents' vehicle travels 10 km/h faster than Jenna's, and Jenna arrives at the tournament 3 hours earlier than Hannah. Determine how fast Hannah's parents are driving.

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