KEY

Math 20-1

LO4 – FQ - 6.1 Rational Expressions 2

Use the following information to answer Q1:

A student is working on a Rational Expressions question. Their work is shown below.

Line 1 $\dfrac{x^2+2x-15}{x^2+11x+30}$

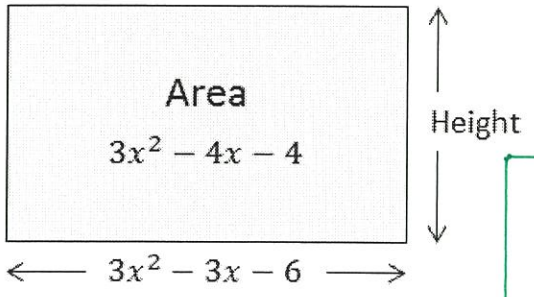
Line 2 $\dfrac{(x+5)(x-3)}{(x+5)(x+6)}$

Line 3 $\dfrac{(x-3)}{(x+6)}$, where $x \neq -6$ $\dfrac{(x-3)}{(x+6)}$, where $x \neq -5, -6$

Q1: What mistake did the student make?

a. The student factored the numerator incorrectly.
b. The student factored the denominator incorrectly.
c. The student simplified the expression incorrectly.
(d.) The student incorrectly stated the Non-Permissible Value(s).

Q2: *(Long Answer)* Determine the height of the rectangle, and state any non-permissible values. *(2 marks)*



Area = L × H

$H = \dfrac{\text{Area}}{\text{Length}} = \dfrac{(3x^2-4x-4)}{(3x^2-3x-6)}$

$3x^2-4x-4$ (+2, −6: □ + □ = −4, □ × □ = −12)

$3x^2+2x-6x-4$

$(3x^2+2x)+(-6x-4)$

$x(3x+2)-2(3x+2)$

$(3x+2)(x-2)$

$3x^2-3x-6$

$3(x^2-x-2)$ (+1, −2: □ + □ = −1, □ × □ = −2)

$3(x+1)(x-2)$

$H = \dfrac{(3x^2-4x-4)}{(3x^2-3x-6)} = \dfrac{(3x+2)(x-2)}{3(x+1)(x-2)}$

$H = \dfrac{3x+2}{3(x+1)}$, where $x \neq -1, 2$

MARKING:

Beginning	0.0 - 1.0
Progressing	1.5 - 2.0
Competent	2.5
Exemplary	3.0