

## Algebra 2, Module 7, Lesson 3 – Solving Rational Equations Using Algebraic Methods

2. What is the solution to the equation  $\frac{-x-8}{x+2} = \frac{2}{x+2}$ ?

(A)  $x = -10$

Correct. Your solution should have been

$$\frac{-x-8}{x+2} = \frac{2}{x+2}$$

$$2(x+2) = (-x-8)(x+2)$$

similar to:  $2x+4 = -x^2-2x-8x-16$

$$x^2+12x+20=0$$

$$(x+2)(x+10)=0$$

$$x = -2 \text{ or } x = -10$$

But since -2 makes the denominator 0, it must be excluded.

(B)  $x = -8$

Incorrect. This makes the numerator equal to 0, but it is not a solution to the equation.

(C)  $x = -2$  or  $x = -10$

Incorrect. -2 must be excluded from the solution set because it makes the denominator 0.

(D)  $x = -4$  or  $x = -5$

Incorrect. You may have factored your quadratic equation improperly. Check that step and try again.