

It appears that you combined the original numerators while changing the denominators to the correct LCD. Instead, rewrite each term as an *equivalent* fraction before adding or subtracting:

$$\frac{6x}{x^2 - 64} - \frac{8}{4x - 32} + \frac{2}{x + 8} = \frac{6x(4)}{4(x - 8)(x + 8)} - \frac{8(x + 8)}{4(x - 8)(x + 8)} + \frac{2(4)(x - 8)}{4(x - 8)(x + 8)}$$

Then simplify and combine the numerators.