Evaluate 3^2: $9^{8-3x} = 9^{2x-2}$

Because both exponential expressions have the same base, their exponents must be equal. Write a new equation that sets the exponents equal to each other:

$8 - 3x = 2x - 2$

Solve the linear equation as you normally would: $10 - 3x = 2x$, $10 = 5x$, $2 = x$