Problem of the Week

Problem D

The Same Power

Sometimes two powers that are not written with the same base are still equal in value. For example, $9^3 = 27^2$ and $(-5)^4 = 25^2$.

If $x$ and $y$ are integers, find all ordered pairs $(x, y)$ that satisfy the equation

$$(x - 1)^{x+y} = 8^2$$