

WARM-UP

Graph

① $y = \left(\frac{1}{2}\right)^x - 3$ ② $y = \log_5(x+2) + 1$

Today you will solve
exponential equations
by matching the base

$$\text{If } a^x = a^y \text{ then } x = y$$

Ex1 Solve.

$$3^{2x} = 3^{x-3}$$

$$\begin{array}{r} 2x = x - 3 \\ -x \quad -x \\ \hline x = -3 \end{array}$$

Ex2

$$3^{-n-1} = 9$$

$$3^{-n-1} = 3^2$$

$$-n-1 = 2$$

$$-n = 3$$

$$n = -3$$

Ex3

$$\left(\frac{1}{4}\right)^{-3x+1} = 64$$

$$(4^{-1})^{-3x+1} = 4^3$$

$$3x-1 = 3$$

$$3x = 4$$

$$x = \frac{4}{3}$$

