Solve for x

$3^x - 4 \leq 23$

$-5(2)^x < 40$

Solve for x

$3^x - 4 \leq 23$

$+4 \quad +4$

$3^x \leq 27$

$\log_3 27 \geq x$

$3 \geq x$

or

$x \leq 3$

Check $x=0$

$3^0 - 4 \leq 23$

$1 - 4 \leq 23$

$-3 \leq 23$ ✓

$-5(2)^x < 40$

$\frac{}{-5} \quad \frac{}{-5}$

$2^x > -8$

2 to any power always be positive. So 2^x will always be larger than -8.

All Real #s

Practice - Solve for x

$$8 - 3^{x+1} \geq -1$$

Practice - Solve for x

$$8 - 3^{x+1} \geq -1$$

$-8 \quad -8$

$$-(3)^{x+1} \geq -9$$

$-1 \quad -1$

$$3^{x+1} \leq 9$$

$$\log_3 9 \geq x+1$$

$$2 \geq x+1$$

$-1 \quad -1$

$$1 \geq x \quad \text{or} \quad x \leq 1$$

Check $x=0$

$$8 - 3^{0+1} \geq -1$$

$$8 - 3^1 \geq -1$$

$$8 - 3 \geq -1$$

$$5 \geq -1 \quad \checkmark$$

Practice - Solve for x

$$3e^{6x} + 6 < -6$$

Practice - Solve for x

$$3e^{6x} + 6 < -6$$

$-6 \quad -6$

$$\frac{3e^{6x}}{3} < \frac{-12}{3}$$

$$e^{6x} < -4$$

e to any power is positive.
So it will never be smaller than -4.

No Solution