

0.6

$$\sqrt{4^x + 2^x + 3} + 4^x + 2^x \geq 9$$

$$0 \leq 4^x + 2^x + 3 \quad \text{: } \wedge$$

$$t = \sqrt{4^x + 2^x + 3} \quad \text{no}$$

$$t + t^2 - 3 \geq 9$$

$$t^2 + t - 12 \geq 0$$

$$(t+4)(t-3) \geq 0$$

$$t \leq -4 \quad \text{no} \quad t \geq 3$$

$$\sqrt{4^x + 2^x + 3} \leq -4$$

no

$$\sqrt{4^x + 2^x + 3} \geq 3$$
$$4^x + 2^x \geq 6$$

$$4^x + 2^x - 6 \geq 0$$

$$A^2 + A - 6 \geq 0 \quad A = 2^x$$

$$(A+3)(A-2) \geq 0$$

$$A \leq -3 \quad \text{no} \quad A \geq 2$$

$$2^x \leq -3$$

no

$$2^x \geq 2$$

no

$$\boxed{x \geq 1}$$