$$4 \cdot 9^{2x} = 14$$

$$\frac{4 \cdot 9^{2x}}{4} = \frac{14}{4}$$

$$9^{2x} = 3.5$$

$$9^{2x} = 3.5$$

$$\log_9 9^{2x} = \log_9 3.5$$

$$2x = \log_9 3.5$$

$$2x = \log_9 3.5$$

$$\frac{2x}{2} = \frac{\log_9 3.5}{2}$$

$$x = \frac{\log_9 3.5}{2} = 0.285$$

$$10^{2x-18} + 12 = -3$$

$$10^{2x-18} + 12 = -3$$

$$-12 \quad -12$$

$$10^{2x-18} = -15$$

$$10^{2x-18} = -15$$

$$\log 10^{2x-18} = \log(-15)$$

$\log(-15)$ is not defined for real numbers.

$$2 \cdot \log(6x) + 16 = 14$$

$$2 \cdot \log(6x) + 16 = 14$$

$$-16 \quad -16$$

$$2 \cdot \log(6x) = -2$$

$$\frac{2 \cdot \log(6x)}{2} = \frac{-2}{2}$$

$$\log(6x) = -1$$

$$\log(6x) = -1$$

$$10^{\log(6x)} = 10^{-1}$$

$$6x = 10^{-1}$$

$$6x = 10^{-1}$$

$$\frac{6x}{6} = \frac{10^{-1}}{6}$$

$$x = \frac{10^{-1}}{6} = 0.017$$

$$\log_8(3x-18)=3$$

$$8^{\log_8(3x-18)}=8^3$$

$$3x-18=8^3$$

$$3x - 18 = 8^3$$

$$3x - 18 = 8^3$$

$$+18 \qquad +18$$

$$3x = 8^3 + 18$$

$$\frac{3x}{3} = \frac{8^3 + 18}{3}$$

$$x = (8^3 + 18)/3 = 176.667$$