

Name _____ KEY _____ Section 0251

Answer all problems. 10 points is the total score (2 points bonus).

1. (4pts) Solve the equation $e^{-3x} = (e^4)^{(x-2)}$.

From $e^{-3x} = e^{4(x-2)}$, we have $-3x = 4(x - 2)$

$$\begin{aligned} &= 4x - 8 \\ -7x &= -8 \\ x &= \frac{8}{7}. \end{aligned}$$

2. (4pts) Solve the equation $\log_2 (5x-3)=1$.

From $\log_2 (5x-3)=1$, we have $5x - 3 = 2$

$$\begin{aligned} 5x &= 5 \\ x &= 1. \end{aligned}$$

3. (4pts) Convert degree measures to radians and radian measures to degrees.

3.1 $\frac{\pi}{6}$

$$\frac{\pi}{6} = \frac{\pi}{6} \times \frac{180^\circ}{\pi} = 30^\circ.$$

3.2 120°

$$120^\circ = 120^\circ \times \frac{\pi}{180^\circ} = \frac{2\pi}{3}.$$