

Name _____ KEY _____ Section 0242

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

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

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

$$\begin{aligned} -x &= 3(x + 4) \\ &= 3x + 12 \\ -4x &= 12 \\ x &= -3. \end{aligned}$$

2. (4pts) Solve the equation $\log_5(9x+4)=1$.

From $\log_5(9x + 4) = 1$, we have $9x + 4 = 5$.

$$\begin{aligned} 9x &= 1 \\ x &= \frac{1}{9}. \end{aligned}$$

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

3.1 $\frac{2\pi}{3}$

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

3.2 150°

$$150^\circ = 150^\circ \times \frac{\pi}{180^\circ} = \frac{5\pi}{6}$$