

## 5C Composite Volumes of Revolution

1. Use mathematical induction to prove that:

$$\begin{bmatrix} 1 & -1 \\ 0 & 2 \end{bmatrix}^n = \begin{bmatrix} 1 & 1 - 2^n \\ 0 & 2^n \end{bmatrix} \text{ for } n \in \mathbb{Z}^+$$

2. Use mathematical induction to prove that:

$$\begin{bmatrix} -2 & 9 \\ -1 & 4 \end{bmatrix}^n = \begin{bmatrix} -3n + 1 & 9n \\ -n & 3n + 1 \end{bmatrix} \text{ for } n \in \mathbb{Z}^+$$