

37.69 A boiler feed pump circulates 30gpm against 30 feet of head. A booster pump in series is rated for 5 feet of head at 30 GPM. What is the combined total discharge head for this arrangement?

- A. 5ft
- B. 25ft
- C. 30ft
- D. 35ft

Pumps in series must operate with the same volume flow rate. However, the pressure developed i.e. discharge head for **Series Operation** is additive. Substitute and solve.

$$\Delta h_{total} = \Delta h_{booster} + \Delta h_{boiler\ feed} = 5\text{ft} + 30\text{ft} = 35\text{ft}$$

Answer D