Product of Powers Property

Simplify the expression. Write your answer as a power.

① $3^2 \cdot 3^4 = (3 \cdot 3) \cdot (3 \cdot 3 \cdot 3 \cdot 3) = 3^{2+4} = \boxed{3^6}$

② $x^5 \cdot x^8 = x^{5+8} = \boxed{x^{13}}$

③ $(5^2)^3 = 5^2 \cdot 5^2 \cdot 5^2 = 5^{2 \cdot 3} = \boxed{5^6}$

④ $(m^8)^5 = m^{8 \cdot 5} = \boxed{m^{40}}$

⑤ $(5x)^3 = 5^3 \cdot x^3$

$= \boxed{125x^3}$

⑥ $\left(\frac{2}{3}n\right)^3 = \frac{2^3}{3^3} n^3$

$= \boxed{\frac{8}{27} n^3}$