

Factoring Sum /Difference of Cubes Skill Check

Factor

1) $x^3 + 64$

2) $125 - 8x^3$

3) $2x^3 + 54$

$$\begin{aligned} \textcircled{1} \quad & \underbrace{(x)^3}_a + \underbrace{(4)^3}_b \\ & = (x+4)(x^2 - 4x + 16) \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \underbrace{(5)^3}_a - \underbrace{(2x)^3}_b \\ & = (5 - 2x)(25 + 10x + 4x^2) \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & 2x^3 + 54 \\ & = 2(x^3 + 27) \\ & = 2(x+3)(x^2 - 3x + 9) \end{aligned}$$