

$$\begin{aligned} \textcircled{1} \quad & 36^{0.5} \xrightarrow{5/10} \\ & = 36^{1/2} \\ & = (\sqrt{36})^1 \\ & = 6 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 32^{0.2} \\ & = 32^{2/10} \\ & = 32^{1/5} \\ & = \sqrt[5]{32} \\ & = \sqrt[5]{2 \times 2 \times 2 \times 2 \times 2} \\ & = 2 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & 81^{3/4} \\ & = (\sqrt[4]{81})^3 \\ & = (3)^3 \\ & = 27 \end{aligned}$$

using calculator

$$81^{3/4}$$

8 1 y^x (3 ÷ 4) =

^

x^y

$$\begin{aligned}
 & \textcircled{4} (-32)^{-2/5} \\
 &= \left(\frac{1}{-32} \right)^{2/5} \\
 &= \frac{(\sqrt[5]{1})^2}{(\sqrt[5]{-32})^2} \\
 &= \frac{1^2}{(-2)^2} \\
 &= \frac{1 \cdot 1}{(-2) \cdot (-2)} \\
 &= \left(\frac{1}{4} \right)
 \end{aligned}$$

$$\begin{aligned}
 & -32^{2/5} \\
 &= -1 \left(\frac{1}{32} \right)^{2/5} \\
 &= -1 \cdot \frac{(\boxed{1})^{2/5}}{(\boxed{32})^{2/5}} \\
 &= -\frac{1}{1} \cdot \frac{1}{4} \\
 &= \frac{-1 \cdot 1}{1 \cdot 4} \\
 &= \left(-\frac{1}{4} \right)
 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & (-243)^{0.6} \\ &= (-243)^{\frac{6}{10}} \\ &= (-243)^{\frac{3}{5}} = (-243) \boxed{4^x} \boxed{(} \boxed{3} \boxed{\div} \boxed{5} \boxed{)} = -27 \\ &= \left(\sqrt[5]{-243} \right)^3 \\ &= (-3)^3 \\ &= -27 \end{aligned}$$

Write as a radical

a) $25^{3/5}$

Annotations: "exp" with a blue arrow pointing to the numerator 3, and "index" with a red arrow pointing to the denominator 5.

$$= (\sqrt[5]{25})^3$$

$$= (5)^3$$

$$= 5 \times 5 \times 5$$

$$= 125$$

b) $27^{1/3}$

Annotations: "exp" with a blue arrow pointing to the numerator 1, and "index" with a red arrow pointing to the denominator 3.

$$= (\sqrt[3]{27})^1$$

$$= \sqrt[3]{3 \times 3 \times 3}$$

$$= 3$$

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$$(-243)^{3/5}$$

$$= \left(\sqrt[5]{-243} \right)^3$$

$$= \left(\sqrt[5]{-3x-3x-3x-3x-3} \right)^3$$

$$= (-3)^3$$

$$= (-3) \cdot (-3) \cdot (-3)$$

$$= -27$$