

## RADICACIÓN

Problema 39:

Simplifica:

$$\sqrt{\frac{\frac{1}{27}m^3 - \frac{1}{3}m^2n + mn^2 - n^3}{\frac{1}{3}m - n}}$$

Solución Problema 39:

$$\sqrt{\frac{\frac{1}{27}m^3 - \frac{1}{3}m^2n + mn^2 - n^3}{\frac{1}{3}m - n}} = \sqrt{\frac{\frac{1}{27}m^3 - \frac{1}{3}m^2n + mn^2 - n^3}{\frac{m - 3n}{3}}}$$

$$\sqrt{\frac{\frac{m^3 - 9m^2n + 27mn^2 - 27n^3}{27}}{\frac{m - 3n}{3}}} = \sqrt{\frac{m^3 - 9m^2n + 27mn^2 - 27n^3}{9(m - 3n)}}$$

$$\frac{1}{3} \sqrt{\frac{m^3 - 9m^2n + 27mn^2 - 27n^3}{(m - 3n)}}$$

A continuación dividimos:

$$\frac{m^3 - 9m^2n + 27mn^2 - 27n^3}{(m - 3n)}$$

$$\begin{array}{r} m^3 - 9m^2n + 27mn^2 - 27n^3 : m - 3n \\ -m^3 + 3m^2n \phantom{+ 27mn^2 - 27n^3} \\ \hline +6m^2n - 18mn^2 \phantom{- 27n^3} \\ \phantom{+6m^2n} +9mn^2 \phantom{- 27n^3} \\ \phantom{+6m^2n} -9mn^2 + 27n^3 \\ \phantom{+6m^2n} \phantom{-9mn^2} 0 \phantom{+ 27n^3} \\ \phantom{+6m^2n} \phantom{-9mn^2} \phantom{+ 27n^3} 0 \end{array}$$

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Luego

$$\frac{1}{3} \sqrt{\frac{m^3 - 9m^2n + 27mn^2 - 27n^3}{(m - 3n)}} = \frac{1}{3} \sqrt{m^2 - 6mn + 9n^2}$$
$$= \frac{1}{3} \sqrt{(m - 3n)^2} = \frac{m - 3n}{3} = \frac{m}{3} - n$$