Departamento de Matemáticas 4º Académicas



Sol:

Potencias y Radicales

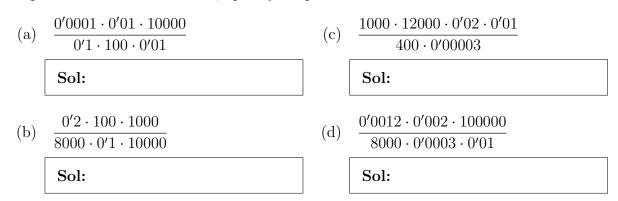
Potencias y Radicales

Sol: a^{13}

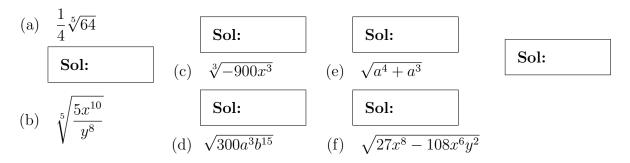
1. Reduce lo que puedas:

(a)
$$\frac{(-2 \cdot 3)^{2} \cdot (3^{2} \cdot 2)^{3}}{(2^{3} \cdot 3 \cdot 2^{-1})^{2}}$$
 (d) $\frac{64 \cdot (x^{2}y^{-1})^{-2}}{24 \cdot (x^{-1}2y)^{3}}$ Sol: $\frac{1}{2}$ Sol: $\frac{1}{3xy}$ Sol: $\frac{b}{a^{7}}$ (e) $\frac{4^{-2} \cdot 9 \cdot 2^{3} \cdot 3^{-2}}{(2 \cdot 3)^{2} (3^{-1} \cdot 8)^{-2}}$ (e) $\frac{(-2a^{-2})^{-1}}{(2 \cdot 3)^{2} (3^{-1} \cdot 8)^{-2}}$ (f) Sol: $\frac{2a^{3}b^{-2}}{(a \cdot a^{3})^{2} (-a^{3})^{-5} \cdot a^{-2}}$ (f) Sol: a^{13} Sol: $\frac{(a^{3}b^{2})^{-2} : b^{-5}}{(a^{-2})^{-\frac{1}{2}}}$ Sol: Sol:

2. Expresa en notación científica, opera y simplifica:



3. Extrae los factores que puedas:



4. Introduce los factores en el radical:

(a)
$$\frac{3}{5}\sqrt{\frac{5}{3}}$$

Sol:

 $2x^3\sqrt{6x}$ (b)

Sol:

(c) $5x\sqrt[3]{x}$

Sol:

(d) $\frac{1}{2}x^2y\sqrt[3]{\frac{2}{xy}}$

Sol:

(e) $2xy^2\sqrt[3]{x^2y}$

Sol:

Sol:

5. Opera y simplifica:

(a) $2\sqrt{3} \cdot 3\sqrt{2} \cdot 5\sqrt{6}$

Sol:

 $\sqrt[3]{81}:\sqrt[3]{9}$

(b)

Sol:

 $\frac{\sqrt{2ab^2}\cdot\sqrt{4a^2b}}{\sqrt{2a^3b}}$ (c)

Sol:

 $\sqrt{2}\sqrt[3]{2}\sqrt[4]{2}$ (d)

Sol:

 $\sqrt{2ab}\sqrt{4a^2b}\sqrt[6]{2a^5b^5}$

Sol:

(f) $\sqrt[4]{\frac{ac^5}{h}} \sqrt[8]{\frac{a^6b^5}{c^2}}$

Sol:

(g) $\sqrt[4]{x^3y^2}:\sqrt{xy}$

Sol:

 $\sqrt{8a^2b}\sqrt[3]{9ab^2}$ (h) $\sqrt[6]{2a}$

Sol:

 $\sqrt[5]{3^2} \cdot \sqrt[8]{2^5} \cdot \sqrt[4]{5^3}$ (i)

Sol:

(j) $\sqrt[8]{4} \cdot \sqrt[6]{16} \cdot \sqrt[12]{8^5}$

Sol:

 $\sqrt{x\sqrt[3]{y}}$ (k)

Sol:

 $\sqrt[3]{\frac{a}{b}}\sqrt{\frac{b}{a}}$

Sol:

 $\sqrt[4]{a\sqrt[3]{a}} \cdot \sqrt{a\sqrt{a}} \cdot \sqrt[6]{a^5\sqrt{a^5}}$

Sol:

(n)

Sol:

 (\tilde{n})

Sol:

(o) $\sqrt{3a^2 + \sqrt{6a^4 - \sqrt{25a^{12}}}}$

Sol:

6. Calcula las siguientes sumas:

(a) $3\sqrt{2} - 5\sqrt{8} + 7\sqrt{32}$

Sol:

(b)
$$\frac{5}{6}\sqrt{27} + 4\sqrt{75} - \frac{3}{4}\sqrt{48} - \frac{5}{4}\sqrt{12}$$

Sol:

(c) $\sqrt{98} + \sqrt{18} + \sqrt{8}$

Sol:

(d) $\sqrt{45x^3} + \sqrt{5x^2y} - \sqrt{80x^3}$

Sol:

(e) $\frac{1}{2}\sqrt{12} + \frac{1}{3}\sqrt{27} + \frac{1}{5}\sqrt{75}$

Sol:

(f) $\sqrt{8b^3} - \sqrt{18b^3} + \sqrt{128b^5}$

Sol:

(g) $\sqrt[3]{54} - 2\sqrt[3]{16}$

Sol:

 $(h) \quad \sqrt{\frac{1}{3}} + \sqrt{27}$

Sol:

(i) $x\sqrt{4(3x+1)} - \sqrt{27x^3+9x^2} + \sqrt{3x^3+x^2}$

Sol:

7. Calcula, racionalizando si fuera necesario::

(a) $\frac{3}{\sqrt{3}}$

Sol:

(b) $\frac{2}{\sqrt[3]{7}}$

Sol:

(c) $\frac{1}{\sqrt{2}-1}$

Sol:

(d) $\frac{6}{\sqrt{3}-1}$

Sol:

(e) $\frac{6}{\sqrt[4]{4}}$

Sol:

 $(f) \quad \frac{\sqrt{6} + \sqrt{3}}{\sqrt{6} - \sqrt{3}}$

Sol: