

# Raíces: racionalización

1. Racionaliza las siguientes expresiones de la forma  $\frac{b}{\sqrt{a}}$ :

a.  $\frac{2}{\sqrt{12}}$

$\frac{\sqrt{3}}{3}$
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d.  $\frac{1}{\sqrt{7}}$

$\frac{\sqrt{7}}{7}$
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g.  $\frac{17}{5\sqrt{11}}$

$\frac{17\sqrt{11}}{55}$
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j.  $\frac{2ab}{\sqrt{a-b}}$

$\frac{2ab\sqrt{a-b}}{a-b}$
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b.  $\frac{-9}{\sqrt{3}}$

$-3\sqrt{3}$
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e.  $\frac{5}{\sqrt{10}}$

$\frac{\sqrt{10}}{7}$
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h.  $\frac{31}{\sqrt[3]{13}}$

$\frac{31\sqrt{169}}{13}$
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k.  $\frac{a-b}{\sqrt{a^2-b^2}}$

$\frac{(a-b)\sqrt{a^2-b^2}}{a^2-b^2}$
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c.  $\frac{10}{\sqrt{5}}$

$2\sqrt{5}$
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f.  $\frac{6}{\sqrt{14}}$

$\frac{3\sqrt{14}}{7}$
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i.  $\frac{-1}{\sqrt{xy}}$

$\frac{-\sqrt{xy}}{xy}$
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l.  $\frac{\sqrt{1}}{3\sqrt{6x}}$

$\frac{-\sqrt{6y}}{xy}$
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2. Racionaliza las siguientes expresiones de la forma  $\frac{b}{\sqrt[n]{a^m}}$ :

a.  $\frac{-1}{\sqrt[3]{2}}$

$\frac{-\sqrt[3]{4}}{2}$
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d.  $\frac{-10}{\sqrt[3]{5^3}}$

-2
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g.  $\frac{19}{\sqrt[9]{10^4}}$

$\frac{19\sqrt[9]{10^5}}{10}$
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b.  $\frac{6}{\sqrt[3]{2^2}}$

$3\sqrt[3]{2}$
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e.  $\frac{6}{\sqrt[6]{11^2}}$

$\frac{6\sqrt[6]{11^4}}{11}$
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h.  $\frac{ab}{\sqrt[9]{10^2}}$

$\frac{ab\sqrt[9]{10^3}}{10}$
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c.  $\frac{\sqrt{2}}{\sqrt[4]{3}}$

$\frac{\sqrt{2} \cdot \sqrt[4]{3^3}}{3}$
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f.  $\frac{-\sqrt{3}}{\sqrt[7]{6^5}}$

$\frac{-\sqrt{3} \cdot \sqrt[7]{36}}{6}$
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i.  $\frac{16}{\sqrt[4]{3x}}$

$\frac{16\sqrt[4]{27x^3}}{9x}$
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3. Racionaliza las siguientes expresiones de la forma  $\frac{a}{\sqrt{b} \pm \sqrt{c}}$ :

a.  $\frac{13}{\sqrt{3} - \sqrt{2}}$

$13\sqrt{3} + 13\sqrt{2}$

e.  $\frac{2\sqrt{3}}{\sqrt{11} - \sqrt{3}}$

$\frac{\sqrt{3}(\sqrt{11} + \sqrt{3})}{8}$

i.  $\frac{-4}{\sqrt{x} - \sqrt{y}}$

$\frac{4(\sqrt{x} - 4\sqrt{y})}{x - y}$

b.  $\frac{5}{\sqrt{5} + 1}$

$\frac{5\sqrt{5} - 5}{4}$

f.  $\frac{2}{\sqrt{3} - \sqrt{2}}$

$2\sqrt{3} + 2\sqrt{2}$

j.  $\frac{2x}{\sqrt{x} + 1}$

$\frac{4x(\sqrt{x} - 1)}{x - 1}$

c.  $\frac{-3}{\sqrt{6} + \sqrt{3}}$

$\sqrt{6} - \sqrt{3}$

g.  $\frac{10}{2\sqrt{3} + 3}$

$\frac{10(2\sqrt{3} - 3)}{3}$

k.  $\frac{3}{\sqrt{2x+1} - 1}$

$\frac{3(\sqrt{2x+1} + 3)}{x - 1}$

d.  $\frac{\sqrt{2}}{1 - \sqrt{7}}$

$\frac{\sqrt{2}(1 + \sqrt{7})}{6}$

h.  $\frac{5\sqrt{5}}{\sqrt{15} + 4\sqrt{2}}$

$\frac{5(\sqrt{3} - 4\sqrt{10})}{-17}$

l.  $\frac{\sqrt{x}}{\sqrt{x} - 2\sqrt{y}}$

$\frac{x + 2\sqrt{xy}}{x - 4y}$