Operaciones Combinadas en ${\mathbb R}$

Operaciones en R Departamento de Matemáticas

Orden de prioridad en las operaciones:

Hoja 5

- 1. Las expresiones encerradas entre paréntesis, de los interiores a los exteriores.
- 2. Las potencias y los radicales.
- 3. Los productos y cocientes.
- 4. Las sumas y restas. Cuando tengamos operaciones de igual prioridad se ejecutan de manera natural, es decir, de izquierda a derecha.

a)
$$\sqrt{\left[(-5)\cdot 2 - \frac{1}{8}\right] \cdot \left(-\frac{1}{2}\right)} - \sqrt{\left(1 + \sqrt{-16}\cdot \sqrt{-36}\right) \cdot \left(-\frac{3}{4} + 1\right)} + \sqrt{\sqrt{\left(-4\right)^2 \cdot \left(-2\right)^3 \cdot \left(-\frac{1}{2}\right)^{-1}}} =$$

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$$b) \quad \left(\frac{\sqrt[6]{\frac{1}{2} \cdot \frac{1}{4} \cdot \frac{1}{8}}}{1 - \frac{1}{2}}\right)^{2} - \frac{-2 + 2 \cdot \frac{4}{3}}{1 - 1 \cdot \frac{2}{3}} + \sqrt{\frac{2 - \frac{2}{3}}{\frac{1}{3} - \frac{1}{4}}} - \frac{\frac{1 - 0.25}{2} - \frac{\sqrt[3]{(-3 - 1)^{2} + (-5) \cdot (-2) + 1}}{\sqrt{(0.4 \cdot 5) \cdot 18} - \sqrt{16}}}{\frac{2 - \frac{3}{2}}{-2 \cdot \frac{3}{2} + \frac{1}{2}}} = \frac{2 - \frac{3}{2}}{-2 \cdot \frac{3}{2} + \frac{1}{2}}$$

c)
$$\sqrt{\frac{\sqrt{(-2)^3 \cdot \left(\frac{1}{3}\right)^{-3} \cdot \left(-\frac{2}{3}\right)}}{\frac{-2 - \frac{1}{2} + \frac{1}{3}}{-\frac{1}{3} + \frac{5}{2}} + 1 - \frac{6}{5}}} - \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\frac{1}{2} - 1 + \left(-1\right)^3 \cdot \left(\frac{2}{3}\right)^{-1}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}{-2 - \left(-4\right)}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}} = \frac{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}{\sqrt[3]{\frac{16 \cdot \left(\frac{1}{2}\right)^{-3}}}}$$

$$d) \qquad \sqrt{\frac{\frac{1}{5} - \frac{3}{2} + 10^{-1}}{\frac{-1 + \frac{2}{3} - \left(-\frac{4}{5} + 1\right)}{\frac{3}{3} - \frac{1}{3} - 2 \cdot \left(-\frac{1}{2}\right)^{-2} \cdot 2^{3}}{\frac{3 - \frac{1}{3} - 2 \cdot \left(-\frac{1}{2} + 1\right)}{\frac{1}{2} + \frac{\sqrt{-3} \cdot \sqrt{-12}}{4} + \sqrt[3]{\frac{2}{3} \cdot \sqrt[3]{\frac{16}{81}}}}} = \frac{1}{2 - \left(-\frac{5}{3}\right)^{2} + \frac{1}{3} \cdot \frac{1}{$$

e)
$$\frac{1,\widehat{2}:\left(4-\frac{1}{3}\right)+\sqrt{0,\widehat{5}\cdot5}}{\left(2,\widehat{6}-1,6\right)\cdot\left(0,\widehat{80}-0,\widehat{4}+\frac{1}{11}\right)\cdot\sqrt{13+\frac{4}{9}}}=$$

$$f) \frac{\left(\sqrt{9} + \sqrt{4}\right)^{2} - \sqrt[3]{\left(\sqrt{9} + \sqrt{25}\right)^{2}}}{\frac{1}{2} + 2\cdot\left(-\frac{1}{3}\right) - \sqrt{\frac{\left(0, 4\cdot 0, 6 + 0, 01\right)\cdot\left(\frac{1}{10}\right)^{-2}}{\left(1, 1\cdot 3 + 0, 3\right)\cdot\left(3^{2} + 1\right)}}} \cdot \frac{2}{7} + \frac{\sqrt[3]{100\cdot\left(0, 4^{2} + 0, 11\right)\cdot6^{3}}}{\sqrt{1, 2\cdot60 - 2^{3}}} = \frac{1}{2} + \frac{1}{2$$

- **b)** -13/8
- -132
- -15/4
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