GUIA DE EXERCÍCIOS - CURSO 3

Folha 1

III b.1.1) b) $(-1+\sqrt{2})(2-\sqrt{2})+4$

$(-1).2 + (-1)\sqrt{2} + \sqrt{2}.2 + \sqrt{2}.(-\sqrt{2}) + 4$

$-2 + \sqrt{2} + 2\sqrt{2} - 2 + 4$

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

e) $\left\{\left[(-4-68) \div (18-3) + 3 + 5(3-4) - (5-1)\right] \div (3-5)\right\} \div 2$

$\left\{\left[-\frac{72}{16} + 3 + 15 - 20 - 4\right] \div (-2)\right\} \div 2$

$\left\{\left[-\frac{9}{2} - 6\right] \div (-2)\right\} \div 2$

Cálculo auxiliar

$-\frac{9}{2} - 6 = -\frac{9}{2} - \frac{12}{2} = -\frac{21}{2}$.

$\left\{-\frac{21}{2} \cdot \left(-\frac{1}{2}\right)\right\} \div 2$

$\frac{21}{4} \cdot \frac{1}{2} = \boxed{\frac{21}{8}}$

III c.11) b) $\frac{(3^3)^2 \cdot 3^4 \cdot 3^7}{3^6 \cdot 3^5} = \frac{3^6 \cdot 3^4 \cdot 3^7}{3^6 \cdot 3^5} = \frac{3^{17}}{3^{11}} = 3^6 = \boxed{729}$

III i.11)

b) $\sqrt{5} \cdot \sqrt{20} = 10$

$\sqrt{5.20}$

$\sqrt{100} = \boxed{10}$

g) $\frac{\sqrt[4]{b^{-8} c^{-4} d}}{\sqrt[4]{b^2.c}} = \boxed{\frac{\sqrt[4]{d}}{\sqrt[4]{b^2.c}}}$

Cálculos auxiliares

$\sqrt[4]{b^8} = \frac{8}{4} = \frac{2}{b} = b^2$.

$\sqrt[4]{c^4} = \frac{4}{c^4} = \frac{1}{c} = c^1$.

III j.11) b) $\left(\frac{1}{9}\right)^{-\frac{1}{2}} = \left(\frac{1}{3^2}\right)^{-\frac{1}{2}} = 3^{-2.(-\frac{1}{2})} = 3^1 = \boxed{3}$

III k.11) e) $\frac{3+\sqrt{2}}{3-\sqrt{2}} = \frac{3+\sqrt{2}}{(3-\sqrt{2})} \cdot \frac{3+\sqrt{2}}{(3+\sqrt{2})} = \frac{3^2 + 2.3\sqrt{2} + (\sqrt{2})^2}{9 - (\sqrt{2})^2} = \frac{9+6\sqrt{2}+2}{9-2}$

$\boxed{\frac{11+6\sqrt{2}}{7}}$.