

$$\begin{aligned}
 \text{620} \quad & \frac{a + \sqrt{a^2 - 1}}{a - \sqrt{a^2 - 1}} \cdot \frac{a + \sqrt{a^2 - 1}}{a + \sqrt{a^2 - 1}} = \\
 & = \frac{(a + \sqrt{a^2 - 1})^2}{a^2 - (a^2 - 1)} = \frac{\overbrace{(a^2 + a^2 - 1)}^{(\sqrt{a^2 - 1})^2} + 2a\sqrt{a^2 - 1}}{\cancel{a^2} - \cancel{a^2} + 1} =
 \end{aligned}$$

$$= 2a^2 - 1 + 2a\sqrt{a^2 - 1}$$

$$\text{585} \quad \frac{\sqrt{6} + 3\sqrt{3}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6} \cdot \sqrt{3} + 3\sqrt{3} \cdot \sqrt{3}}{3} =$$

$$= \frac{\sqrt{18} + 3 \cdot 3}{3} = \frac{\sqrt{3^2 \cdot 2} + 9}{3} = \frac{3\sqrt{2} + 9}{3} =$$

$$= \frac{\cancel{3}(\sqrt{2} + 3)}{\cancel{3}} = \sqrt{2} + 3$$

Si potena risolve cu:

$$\frac{\sqrt{6} + 3\sqrt{3}}{\sqrt{3}} = \frac{\cancel{\sqrt{3}}(\sqrt{2} + 3)}{\cancel{\sqrt{3}}} = \sqrt{2} + 3$$

**658**  $(x - 2)^2 = x^2 + (\sqrt{3} - 1)^2$

$$\cancel{x^2} + \cancel{4} - 4x = \cancel{x^2} + \cancel{3} - 2\sqrt{3} + \cancel{1}$$

$$-4x = -2\sqrt{3}$$

$$x = \frac{-2\sqrt{3}}{-4} = \frac{\sqrt{3}}{2}$$

**656**  $x\sqrt{8} - x\sqrt{18} = 6$

$$x\sqrt{2^3} - x\sqrt{2 \cdot 3^2} = 6$$

$$2\sqrt{2}x - 3\sqrt{2}x = 6$$

$$-\sqrt{2}x = 6$$

$$x = -\frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = -\frac{6\sqrt{2}}{\cancel{2}_1} = -3\sqrt{2}$$

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$$\left(\frac{x}{\sqrt{2}} - \sqrt{2}\right)^2 - \frac{1}{2}(x - \sqrt{3})^2 = -\frac{1}{2}$$

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

$$\cancel{\frac{x^2}{2}} + 2 - 2x - \cancel{\frac{1}{2}x^2} - \frac{3}{2} + \sqrt{3}x = -\frac{1}{2}$$

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

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

$$x = -\frac{1}{\sqrt{3} - 2} \cdot \frac{\sqrt{3} + 2}{\sqrt{3} + 2} = -\frac{\sqrt{3} + 2}{3 - 4} =$$

$$= -\frac{\sqrt{3} + 2}{-1} = \sqrt{3} + 2$$