23/10/2020

RAZIONALIZZAZIONE

$$\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

LO STESSO NUMERO
SCRITTO IN DUE MODI
DIVERSI

$\frac{\sqrt{2}}{2}$ ha il denominatore "razionalizzato", mentre

$\frac{1}{\sqrt{2}}$ ha il denominatore irrazionale

584 $\qquad \dfrac{15}{2\sqrt{5}} \qquad\qquad \dfrac{12}{5\sqrt{6}} \qquad\qquad \left[\dfrac{3\sqrt{5}}{2} ; \dfrac{2\sqrt{6}}{5} \right]$

$$\frac{15}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\overset{3}{\cancel{15}}\sqrt{5}}{2 \cdot \cancel{5}} = \frac{3\sqrt{5}}{2}$$

$$\frac{12}{5\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{\overset{2}{\cancel{12}}\sqrt{6}}{5 \cdot \cancel{6}} = \frac{2\sqrt{6}}{5}$$

585 $\qquad \dfrac{\sqrt{6} + 3\sqrt{3}}{\sqrt{3}} \qquad\qquad\qquad\qquad [\sqrt{2} + 3]$

$$\frac{\sqrt{6} + 3\sqrt{3}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{18} + 3 \cdot 3}{3} = \frac{\sqrt{3^2 \cdot 2} + 9}{3} =$$

$$= \frac{3\sqrt{2} + 9}{3} = \frac{\cancel{3}(\sqrt{2} + 3)}{\cancel{3}} = \sqrt{2} + 3$$

600 $\dfrac{2}{\sqrt{3}-1}$ $\qquad\qquad [\sqrt{3}+1]$

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

$$(A-B)(A+B) = A^2 - B^2 \qquad\qquad = \sqrt{3}+1$$

601 $\dfrac{1}{\sqrt{5}-\sqrt{3}}$ $\qquad\qquad \left[\dfrac{\sqrt{5}+\sqrt{3}}{2}\right]$

$$\frac{1}{\sqrt{5}-\sqrt{3}} \cdot \frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}+\sqrt{3}} = \frac{\sqrt{5}+\sqrt{3}}{5-3} = \frac{\sqrt{5}+\sqrt{3}}{2}$$