

13/11/2020

519 $3x^2 - 5x + 1$

SCOMPONRE

$$\Delta = 25 - 12 = 13$$

$$x_{1,2} = \frac{5 \pm \sqrt{13}}{6}$$

$$3x^2 - 5x + 1 = 3 \left(x - \frac{5 - \sqrt{13}}{6} \right) \left(x - \frac{5 + \sqrt{13}}{6} \right)$$

524 $-x^2 + \frac{9}{2}x - 2$

$$a = -1$$

$$\Delta = \frac{81}{4} - 4(-1)(-2) = \frac{81}{4} - 8 = \frac{49}{4}$$

2 radici $x_{1,2} = \frac{-\frac{9}{2} \pm \sqrt{\frac{49}{4}}}{-2} =$

$$= \frac{-\frac{9}{2} + \frac{7}{2}}{-2} = \frac{-\frac{9}{2} - \frac{7}{2}}{-2} = \frac{-\frac{16}{2}}{-2} = \frac{-8}{-2} = 4$$
$$= \frac{-\frac{9}{2} + \frac{7}{2}}{-2} = \frac{-\frac{9}{2} + \frac{7}{2}}{-2} = \frac{-1}{-2} = \frac{1}{2}$$

$$-x^2 + \frac{9}{2}x - 2 = - \left(x - 4 \right) \left(x - \frac{1}{2} \right) = (4 - x) \left(x - \frac{1}{2} \right)$$

550 $\frac{x^2 - 2}{x^2 - 3\sqrt{2}x + 4} = \text{SEMPLIFICARE}$

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

↙
 $x^2 - 3\sqrt{2}x + 4$

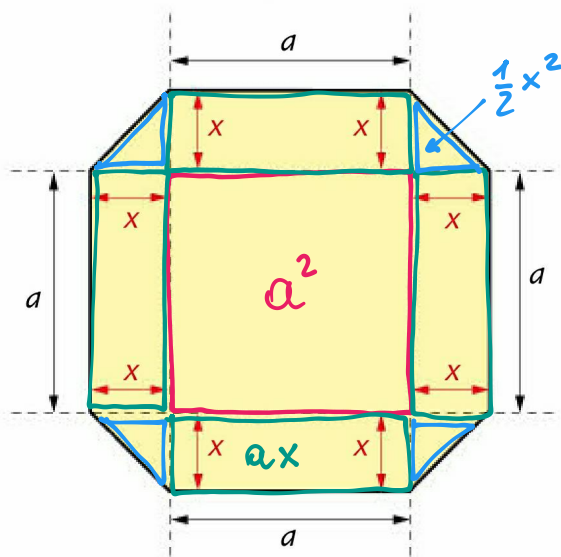
$$\Delta = 18 - 16 = 2 \quad x_{1,2} = \frac{3\sqrt{2} \pm \sqrt{2}}{2} = \begin{cases} \sqrt{2} \\ 2\sqrt{2} \end{cases}$$

705 Osserva la figura. Determina x in modo che l'area dell'ottagono colorato sia $\frac{23}{9}a^2$.

$$\begin{bmatrix} a \\ 3 \end{bmatrix}$$

$$a > 0$$

$$x > 0$$



$$a^2 + 4ax + 4 \cdot \frac{1}{2}x^2 = \frac{23}{9}a^2$$

$$2x^2 + 4ax - \frac{14}{9}a^2 = 0 \quad \beta = 2a$$

$$\frac{\Delta}{4} = 4a^2 + \frac{28}{9}a^2 = \frac{64}{9}a^2$$

$$\frac{-\frac{14}{3}a}{2} = -\frac{\frac{7}{6}a}{3} = -\frac{7}{3}a \text{ N.A.}$$

$$x = \frac{-2a \pm \sqrt{\frac{64}{9}a^2}}{2} = \frac{-2a \pm \frac{8}{3}a}{2}$$

$$\frac{\frac{2}{3}a}{2} = \boxed{\frac{1}{3}a}$$

APPLICARE LA REGOLA DI CARTESIO

491 $x^2 - 5x + 2 = 0$ coeff. $\neq 0$

VAR. VAR.

$$\Delta = 25 - 8 = 17 > 0$$

2 SOLUZIONI ENTRAMBE POSITIVE

$$x = \frac{5 \pm \sqrt{17}}{2} = \begin{cases} \frac{5 - \sqrt{17}}{2} > 0 & \text{perché } 5 > \sqrt{17} \\ \frac{5 + \sqrt{17}}{2} > 0 \end{cases}$$

495 $(1 - \sqrt{2})x^2 + 3x + \sqrt{5} - \sqrt{2} = 0$

< 0
VAR. PERM. > 0

$$\begin{aligned} \Delta &= 9 - 4(1 - \sqrt{2})(\sqrt{5} - \sqrt{2}) = 9 - 4(\sqrt{5} - \sqrt{2} - \sqrt{10} + 2) = \\ &= 9 - 4\sqrt{5} + 4\sqrt{2} + 4\sqrt{10} - 8 = 1 + 4\sqrt{2} + 4(\underbrace{\sqrt{10} - \sqrt{5}}_{> 0}) > 0 \end{aligned}$$

1 SOLUZ. NEGATIVA (PERM.) 1 SOLUZ. POSITIVA (VAR.)