

ESERCIZIO

Dati i seguenti punti A,B,C,D,O calcolare la risultante ed il momento della risultante rispetto al punto "O" con riferimento ai seguenti vettori:

\overline{AB} e \overline{CD}

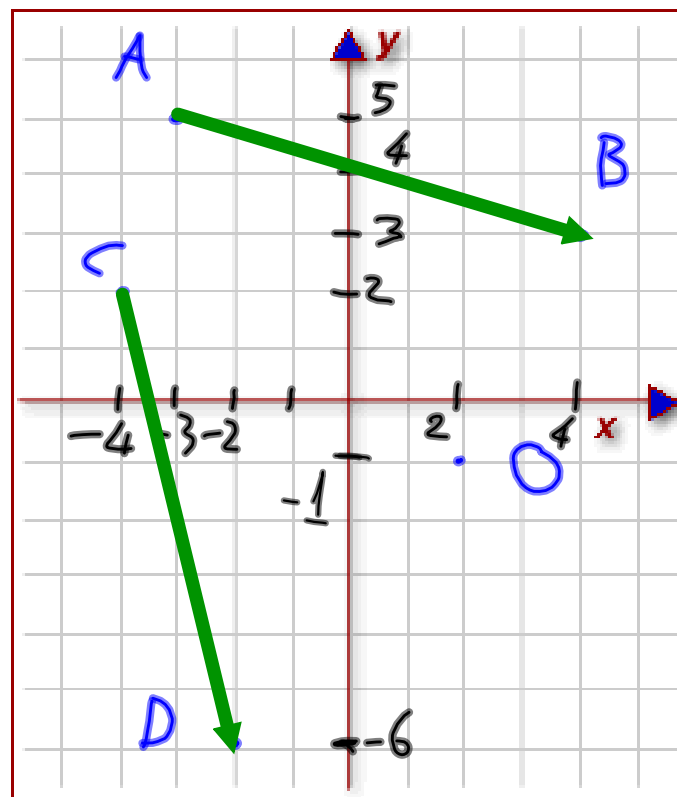
A(-3;5)

B(4;3)

C(-4;2)

D(-2;-6)

O(2;-1)



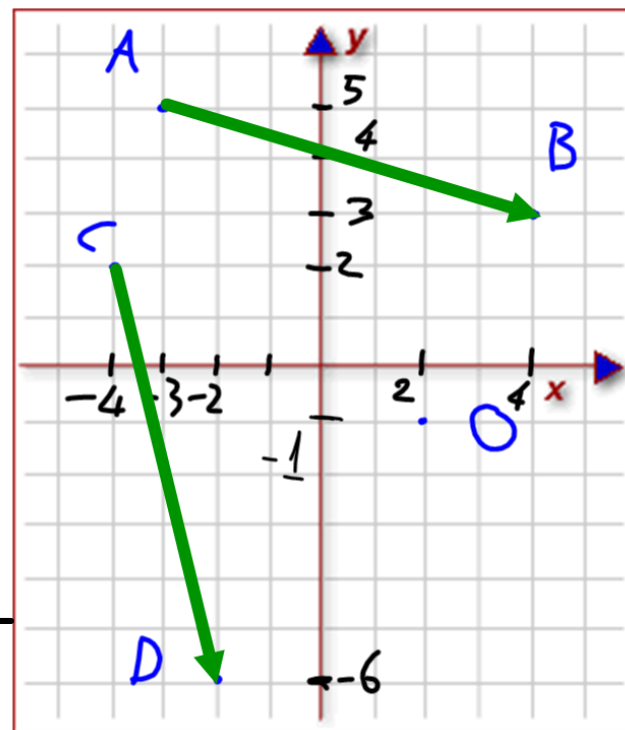
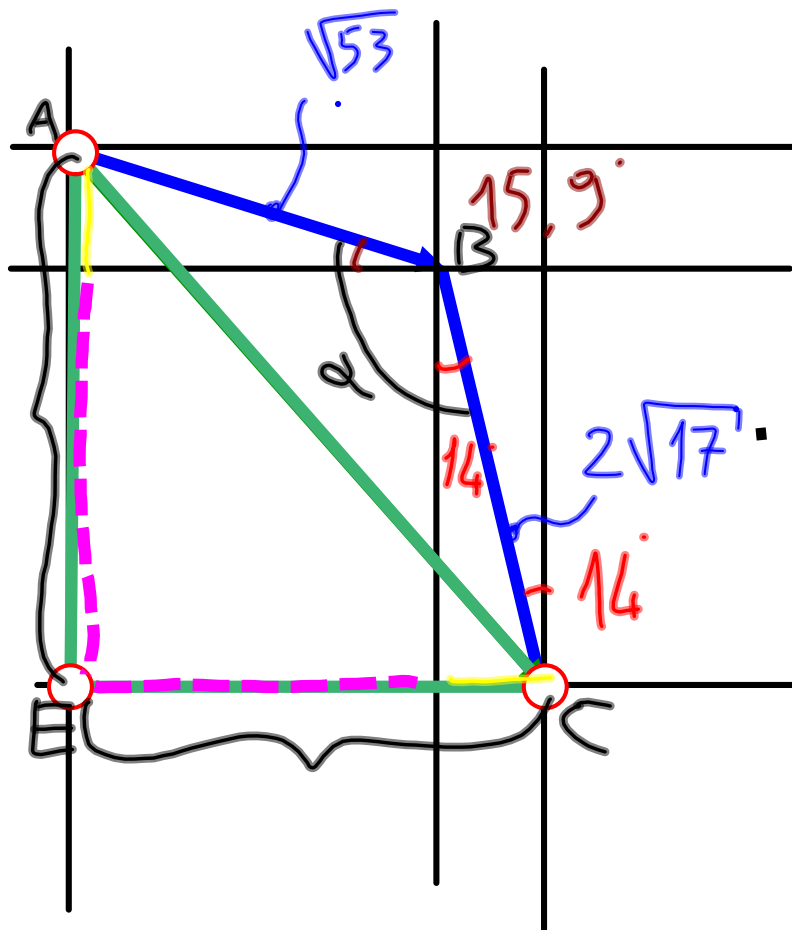
A(-3;5)

B(4;3)

C(-4;2)

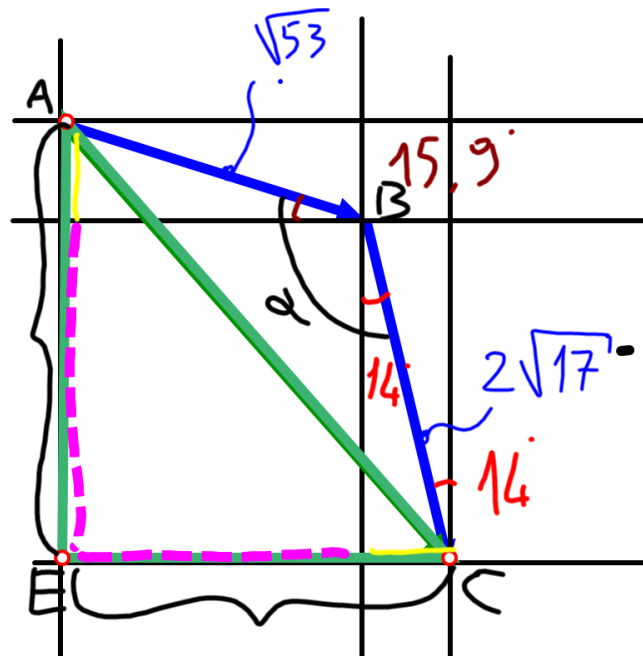
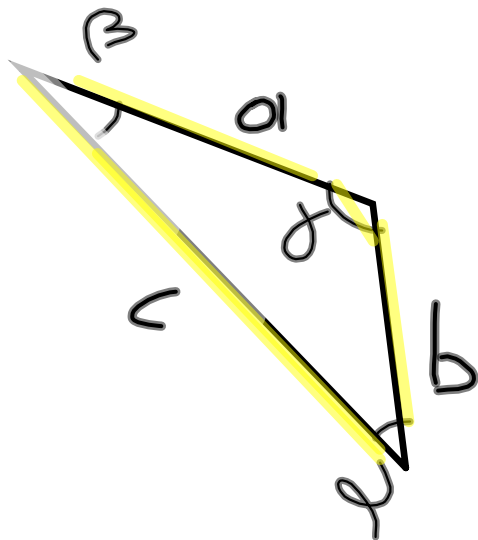
D(-2;-6)

O(2;-1)



$$\alpha = 90 + 14 + 15,9 = 119,9^\circ$$

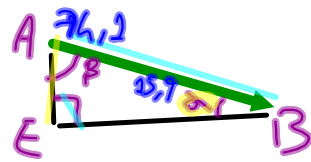
$$\frac{AC}{\sin \alpha} =$$



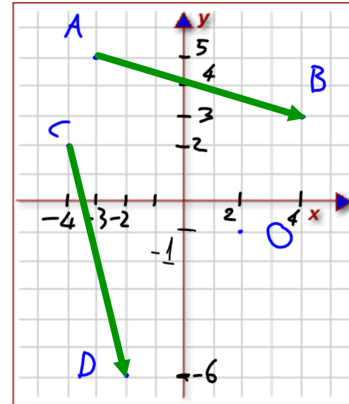
$$c = \sqrt{a^2 + b^2 - 2ab \cos \alpha}$$

$$= \sqrt{\sqrt{53}^2 + 2\sqrt{17}^2 - 2 \cdot \sqrt{53} \cdot 2\sqrt{17} \cdot \cos 101.9} \approx 13.5$$

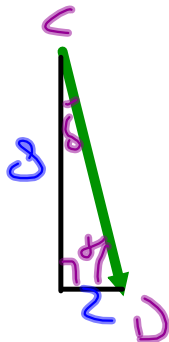
$$b^2 = (2 \cdot \sqrt{17})^2 = 4 \cdot 17$$



$$AB = \sqrt{2^2 + 7^2} = \sqrt{53}$$



- A(-3;5)
- B(4;3)
- C(-4;2)
- D(-2;-6)
- O(2;-1)



$$CD = \sqrt{8^2 + 2^2} = \sqrt{68} = 2\sqrt{17}$$

$\alpha =$

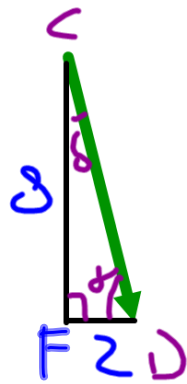
$$\frac{AE}{\sin \alpha} = \frac{AB}{\sin 90} \quad \frac{A}{\sin \alpha} = \frac{B}{\sin \beta} = \frac{C}{\sin \gamma} = \text{const}$$

$$\frac{2}{\sin \alpha} = \frac{\sqrt{53}}{1}$$

$$\frac{\cancel{\sin \alpha} 2}{\sqrt{53} \cancel{\sin \alpha}} = \frac{\sqrt{53}}{\sqrt{53}} \sin \alpha =$$

$$\frac{2}{\sqrt{53}} = \sin \alpha \quad \alpha = \arcsin\left(\frac{2}{\sqrt{53}}\right)$$

$$\alpha = 15,9^\circ \quad \sin^{-1}$$



$$\frac{FD}{\sin \delta} = \frac{CD}{\sin 90}$$

$$\frac{2}{\sin \delta} = \frac{2\sqrt{17}}{1}$$

$$\sin \delta = \frac{2}{2\sqrt{17}}$$

$$\delta = \sin^{-1} \left(\frac{2}{2\sqrt{17}} \right) = 14^\circ$$

$$\gamma = 76^\circ$$

