

	Navn:		Skole:	
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Opgave 436

$$x_v = 4 \cdot \cos(v)$$

$$y_v = 4 \cdot \sin(v)$$

$$\vec{V}_v = \begin{pmatrix} x_v \\ y_v \end{pmatrix}$$

$$x_{12} = 4 \cdot \cos(12) \approx 3,91259$$

$$y_{12} = 4 \cdot \sin(12) \approx 0,8316468$$

$$\vec{V}_{12} = \begin{pmatrix} 3,91 \\ 0,83 \end{pmatrix}$$

$$x_{80} = 4 \cdot \cos(80) \approx 0,6945927$$

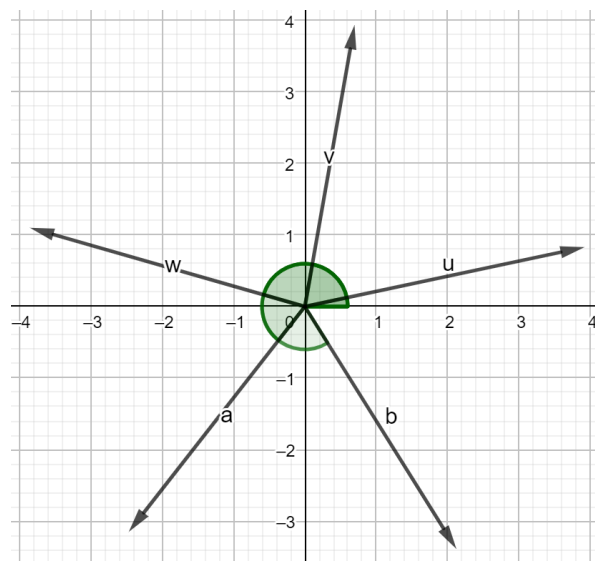
$$y_{80} = 4 \cdot \sin(80) \approx 3,939231$$

$$\vec{V}_{80} = \begin{pmatrix} 0,69 \\ 3,94 \end{pmatrix}$$

$$x_{164} = 4 \cdot \cos(164) \approx -3,845047$$

$$y_{164} = 4 \cdot \sin(164) \approx 1,102549$$

$$\vec{V}_{164} = \begin{pmatrix} -3,85 \\ 1,10 \end{pmatrix}$$



$$x_{232} = 4 \cdot \cos(232) \approx -2,462646$$

$$y_{232} = 4 \cdot \sin(232) \approx -3,152043$$

$$\vec{V}_{232} = \begin{pmatrix} -2,46 \\ -3,15 \end{pmatrix}$$

$$x_{302} = 4 \cdot \cos(302) \approx 2,119677$$

$$y_{302} = 4 \cdot \sin(302) \approx -3,392192$$

$$\vec{V}_{302} = \begin{pmatrix} 2,12 \\ -3,39 \end{pmatrix}$$

$$\vec{V}_{sum} = \vec{V}_{12} + \vec{V}_{80} + \vec{V}_{164} + \vec{V}_{232} + \vec{V}_{302}$$

$$\vec{V}_{sum} = \begin{pmatrix} 3,91 \\ 0,83 \end{pmatrix} + \begin{pmatrix} 0,69 \\ 3,94 \end{pmatrix} + \begin{pmatrix} -3,85 \\ 1,10 \end{pmatrix} + \begin{pmatrix} -2,46 \\ -3,15 \end{pmatrix} + \begin{pmatrix} 2,12 \\ -3,39 \end{pmatrix} = \begin{pmatrix} 0,419 \\ -0,671 \end{pmatrix}$$

$$|\vec{V}_{sum}| = \sqrt{V_{sum_x}^2 + V_{sum_y}^2}$$

$$|\vec{V}_{sum}| = \sqrt{0,419^2 + (-0,671)^2} \approx 0,7910765$$

$$\angle V_{sum} = \tan^{-1} \left(\frac{V_{sum_y}}{V_{sum_x}} \right)$$

$$\angle V_{sum} = 360 + \tan^{-1} \left(\frac{-0,671}{0,419} \right) \approx 301,9824$$