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|--|---------------|--|-----------------------|------------------|
|  | Navn:         |  | Skole:                |                  |
|  | Klasse:<br>20 |  | Dato: 7. oktober 2021 | Fag: Matematik A |

## Opgave 470

$$A = (3; 0; 0)$$

$$B = (3; 2.5; 0)$$

$$C = (3; 5; 0)$$

$$\overrightarrow{AD} = \begin{pmatrix} -1.5 \\ 1 \\ 3 \end{pmatrix}$$

$$D = A + \overrightarrow{AD}$$

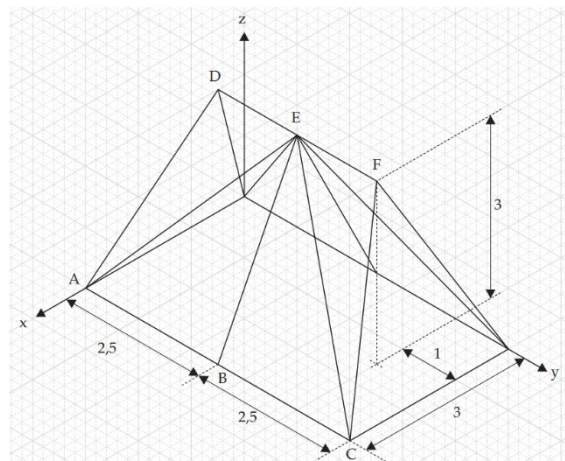
$$D = \begin{pmatrix} 3 \\ 0 \\ 0 \end{pmatrix} + \begin{pmatrix} -1.5 \\ 1 \\ 3 \end{pmatrix}$$

$$D = \begin{pmatrix} 1.5 \\ 1 \\ 3 \end{pmatrix}$$

Formel for punkt D

Indsæt tal

Udreg



$$\overrightarrow{BE} = \begin{pmatrix} -1.5 \\ 0 \\ 3 \end{pmatrix}$$

$$E = B + \overrightarrow{BE}$$

$$E = \begin{pmatrix} 3 \\ 2.5 \\ 0 \end{pmatrix} + \begin{pmatrix} -1.5 \\ 0 \\ 3 \end{pmatrix}$$

$$E = \begin{pmatrix} 1.5 \\ 2.5 \\ 3 \end{pmatrix}$$

Formel for E punkt

Indsæt værdier

Udregn

$$\overrightarrow{CF} = \begin{pmatrix} -1.5 \\ -1 \\ 3 \end{pmatrix}$$

$$F = C + \overrightarrow{CF}$$

$$F = \begin{pmatrix} 3 \\ 5 \\ 0 \end{pmatrix} + \begin{pmatrix} -1.5 \\ -1 \\ 3 \end{pmatrix}$$

$$F = \begin{pmatrix} 1.5 \\ 4 \\ 3 \end{pmatrix}$$

Formel for punkt F

Indsæt tal

Udregn punkt F

$$\overrightarrow{DE} = \begin{pmatrix} 0 \\ 1.5 \\ 0 \end{pmatrix}$$

$$\overrightarrow{FE} = -\overrightarrow{DE}$$

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|  | Navn:         |  | Skole:                |                  |
|  | Klasse:<br>20 |  | Dato: 7. oktober 2021 | Fag: Matematik A |

$$\overrightarrow{FE} = \begin{pmatrix} 0 \\ -1.5 \\ 0 \end{pmatrix}$$

$$\overrightarrow{AE} = \overrightarrow{AD} + \overrightarrow{DE} \quad \text{Formel for vektor AE}$$

$$\overrightarrow{AE} = \begin{pmatrix} -1.5 \\ 1 \\ 3 \end{pmatrix} + \begin{pmatrix} 0 \\ 1.5 \\ 0 \end{pmatrix} \quad \text{Indsæt tal}$$

$$\overrightarrow{AE} = \begin{pmatrix} -1.5 \\ 2.5 \\ 3 \end{pmatrix} \quad \text{Udregning}$$

$$\overrightarrow{CE} = \overrightarrow{CF} + \overrightarrow{FE} \quad \text{Formel for vektor CE}$$

$$\overrightarrow{CE} = \begin{pmatrix} -1.5 \\ -1 \\ 3 \end{pmatrix} + \begin{pmatrix} 0 \\ -1.5 \\ 0 \end{pmatrix} \quad \text{Indsæt værdier}$$

$$\overrightarrow{CE} = \begin{pmatrix} -1.5 \\ -2.5 \\ 3 \end{pmatrix} \quad \text{Udregning}$$

Opskriv alle vektorene igen

$$\overrightarrow{AD} = \begin{pmatrix} -1.5 \\ 1 \\ 3 \end{pmatrix}$$

$$\overrightarrow{AE} = \begin{pmatrix} -1.5 \\ 2.5 \\ 3 \end{pmatrix}$$

$$\overrightarrow{BE} = \begin{pmatrix} -1.5 \\ 0 \\ 3 \end{pmatrix}$$

$$\overrightarrow{CE} = \begin{pmatrix} -1.5 \\ -2.5 \\ 3 \end{pmatrix}$$

$$\overrightarrow{CF} = \begin{pmatrix} -1.5 \\ -1 \\ 3 \end{pmatrix}$$

$$|\vec{V}| = \sqrt{x^2 + y^2 + z^2} \quad \text{Formel for længde af vektorer}$$

Fremgangsmåde er den samme for alle nedenstående udregninger, 1) Indsæt tal i formel for længde af vektor. 2) Udregning

$$|\overrightarrow{AD}| = \sqrt{(-1.5)^2 + 1^2 + 3^2}$$

$$|\overrightarrow{AD}| = 3.5$$

$$|\overrightarrow{AE}| = \sqrt{(-1.5)^2 + 2.5^2 + 3^2}$$

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|  | Klasse:<br>20 |  | Dato: 7. oktober 2021 | Fag: Matematik A |

$$|\overrightarrow{AE}| = 4,1833$$

$$|\overrightarrow{BE}| = \sqrt{(-1.5)^2 + 0^2 + 3^2}$$

$$|\overrightarrow{BE}| = 3,354102$$

$$|\overrightarrow{CE}| = \sqrt{(-1.5)^2 + (-2.5)^2 + 3^2}$$

$$|\overrightarrow{CE}| = 4,1833$$

$$|\overrightarrow{CF}| = \sqrt{(-1.5)^2 + (-1)^2 + 3^2}$$

$$|\overrightarrow{CF}| = 3,5$$