POINTS AND VECTORS

Interactive test

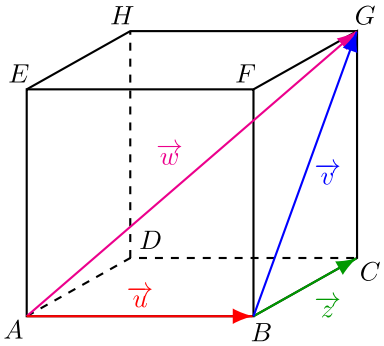
Select one correct answer to each of the questions in the test and press the Finish button at the end. The answers will be validated automatically.

MATH 4 U

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 710577.

1. The vectors $\vec{u}$, $\vec{v}$, $\vec{w}$, $\vec{z}$ are indicated in a cube shown in the figure. The cube edge length is 1. Find the dot products of:

$$\vec{v} \cdot \vec{z} \ , \quad \vec{u} \cdot \vec{v} \ , \quad \vec{w} \cdot \vec{u} \ .$$



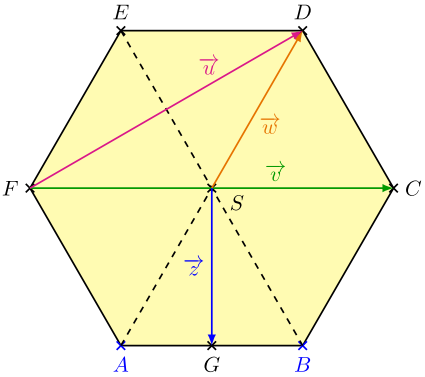
A

B

C

D

2. Let $ABCDEF$ be a regular hexagon with the centre S and the side of length 3 cm. The point G is the midpoint of the segment AB. The vectors $\vec{u}$, $\vec{v}$, $\vec{w}$, $\vec{z}$ are indicated in the hexagon shown in the picture. Find the dot product of: $\vec{v} \cdot \vec{w}$, $\vec{v} \cdot \vec{z}$ and $\vec{v} \cdot \vec{u}$.



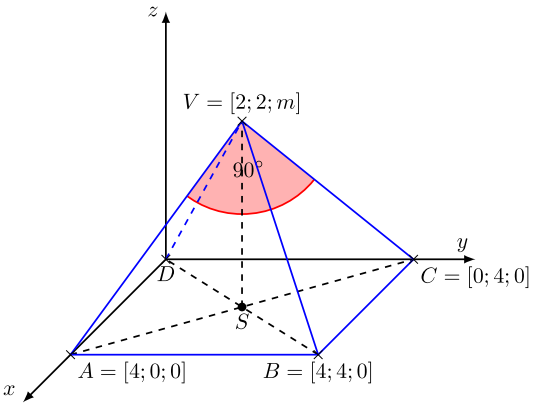
A

B

C

D

3. Let $ABCDV$ be a right pyramid with a square base, such that its opposite edges contain a right angle (see the picture). Specify the missing coordinate of the apex V.



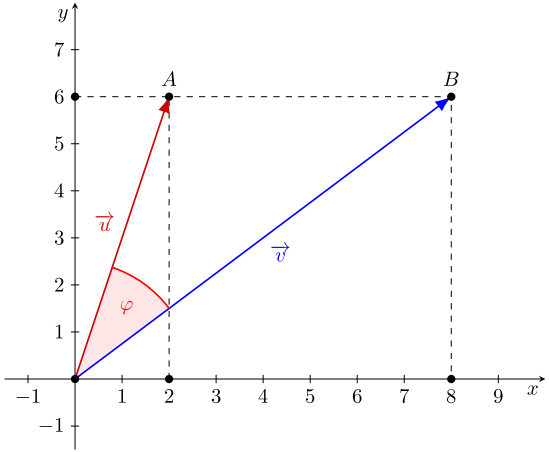
A

B

C

D

4. The vectors $\vec{u}$ and $\vec{v}$ are given by the figure. Find cosine of the angle φ between $\vec{u}$ and $\vec{v}$. Help: Use the dot product of the given vectors.



A

B

C

D

FINISH

This test has been generated in the Math for Teacher application,
a part of the Math for You education portal – `math4u.vsb.cz`.