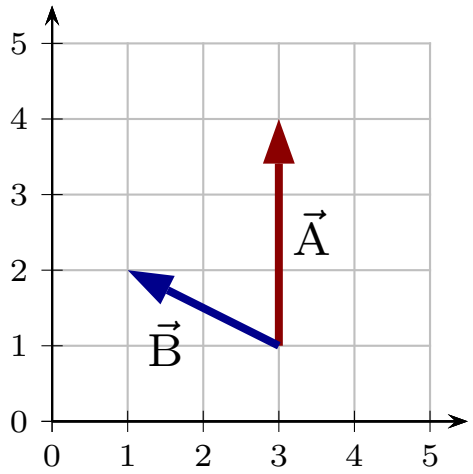
Question 1

Consider the illustrated vectors $\vec{\mathrm{A}}$ and $\vec{\mathrm{B}}$.

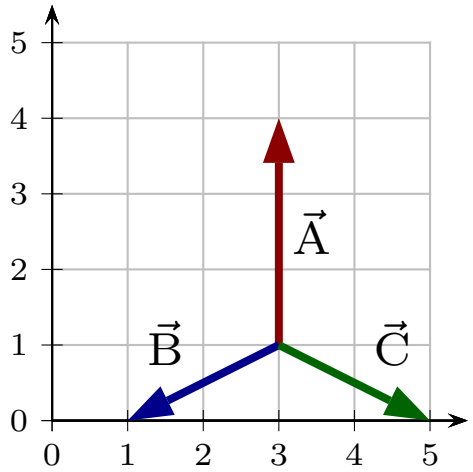


Which of the following is true?

1. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -3$
2. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 3$
3. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 3\,\hat{\mathrm{i}}$
4. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -3\,\hat{\mathrm{i}}$
5. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 6$
6. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -6$

Question 2

Consider the illustrated vectors $\vec{\mathrm{A}}, \vec{\mathrm{B}}$ and $\vec{\mathrm{B}}$.

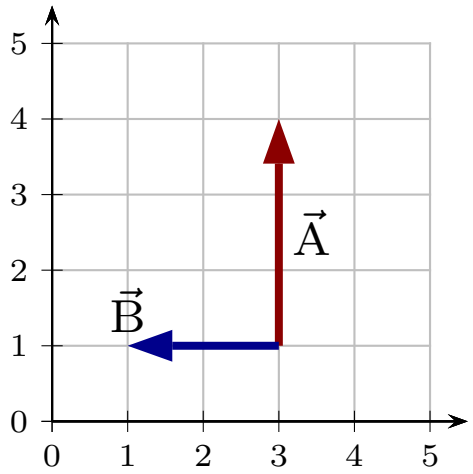


Which of the following is true?

1. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = \vec{\mathrm{A}} \cdot \vec{\mathrm{C}}$
2. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -\vec{\mathrm{A}} \cdot \vec{\mathrm{C}}$
3. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} \neq \vec{\mathrm{A}} \cdot \vec{\mathrm{C}}$

Question 3

Consider the illustrated vectors $\vec{\mathrm{A}}$ and $\vec{\mathrm{B}}$.

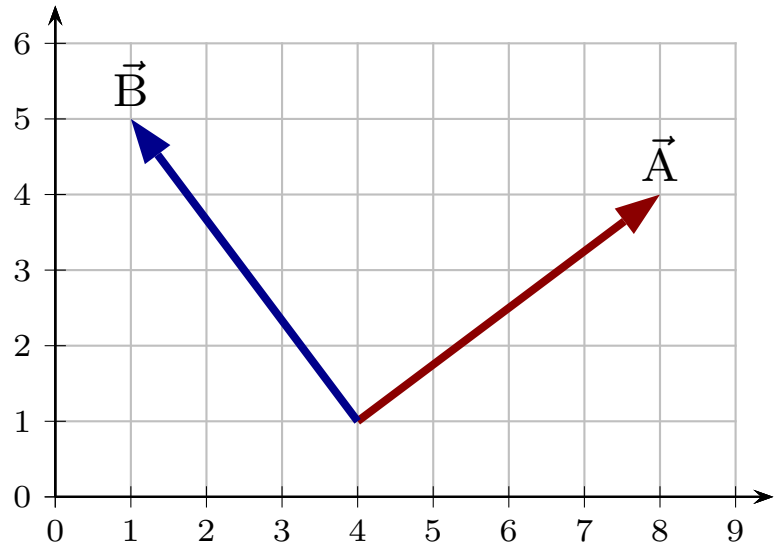


Which of the following is true?

1. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 6$
2. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 6\,\hat{\mathrm{i}}$
3. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 8$
4. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 8\,\hat{\mathrm{i}}$
5. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 0$

Question 4

Consider the illustrated vectors $\vec{\mathrm{A}}$ and $\vec{\mathrm{B}}$.

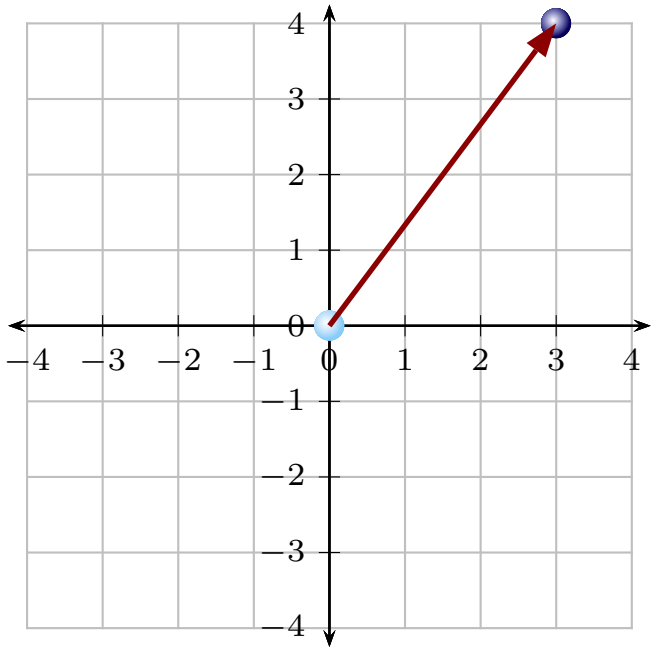


Which of the following is true?

1. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 25$
2. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 25\hat{\mathrm{i}}$
3. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -25$
4. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = -25\hat{\mathrm{i}}$
5. $\vec{\mathrm{A}} \cdot \vec{\mathrm{B}} = 0$

Question 5

A ball moves along the illustrated straight path. A hand exerts a constant force of $8.0\,\mathrm{N}$ to the *right.* Grid units are meters.



Which of the following is the work done by the hand?

1. $W_{\text{hand}} = 24\,\mathrm{J}$
2. $W_{\text{hand}} = -24\,\mathrm{J}$
3. $W_{\text{hand}} = 32\,\mathrm{J}$
4. $W_{\text{hand}} = -32\,\mathrm{J}$
5. $W_{\text{hand}} = 40\,\mathrm{J}$
6. $W_{\text{hand}} = -40\,\mathrm{J}$