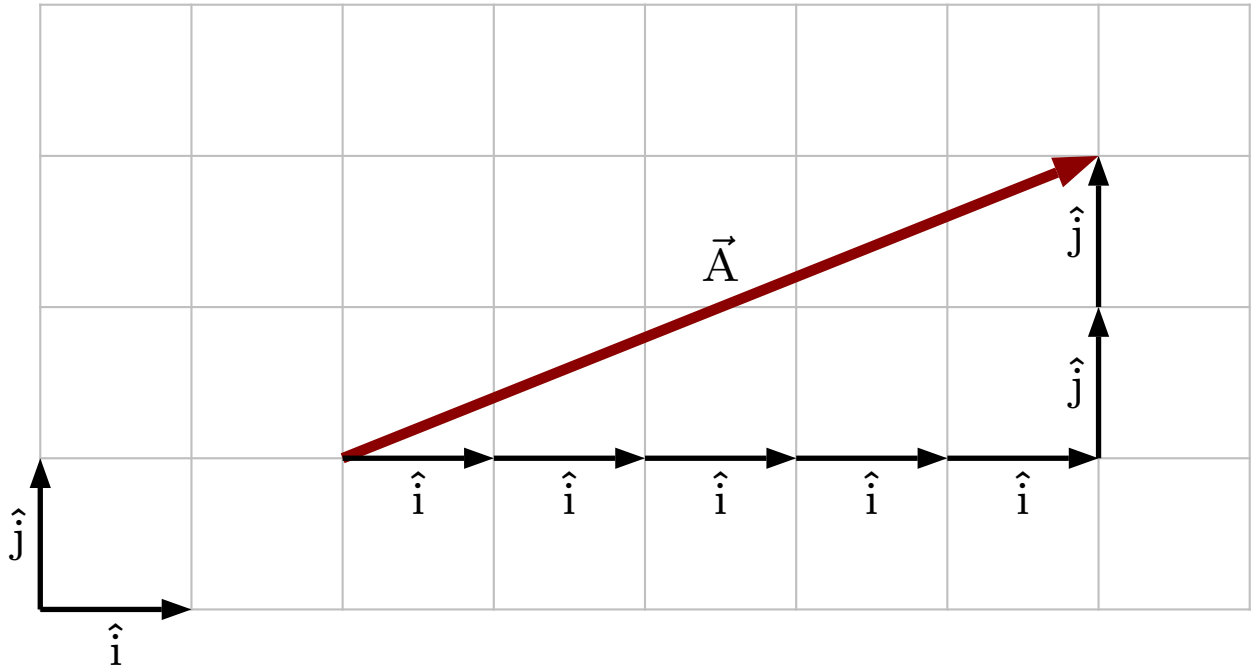
Constructing a Vector from Unit Vectors

How the illustrated vector $\vec{A}$ is decomposed into unit vectors

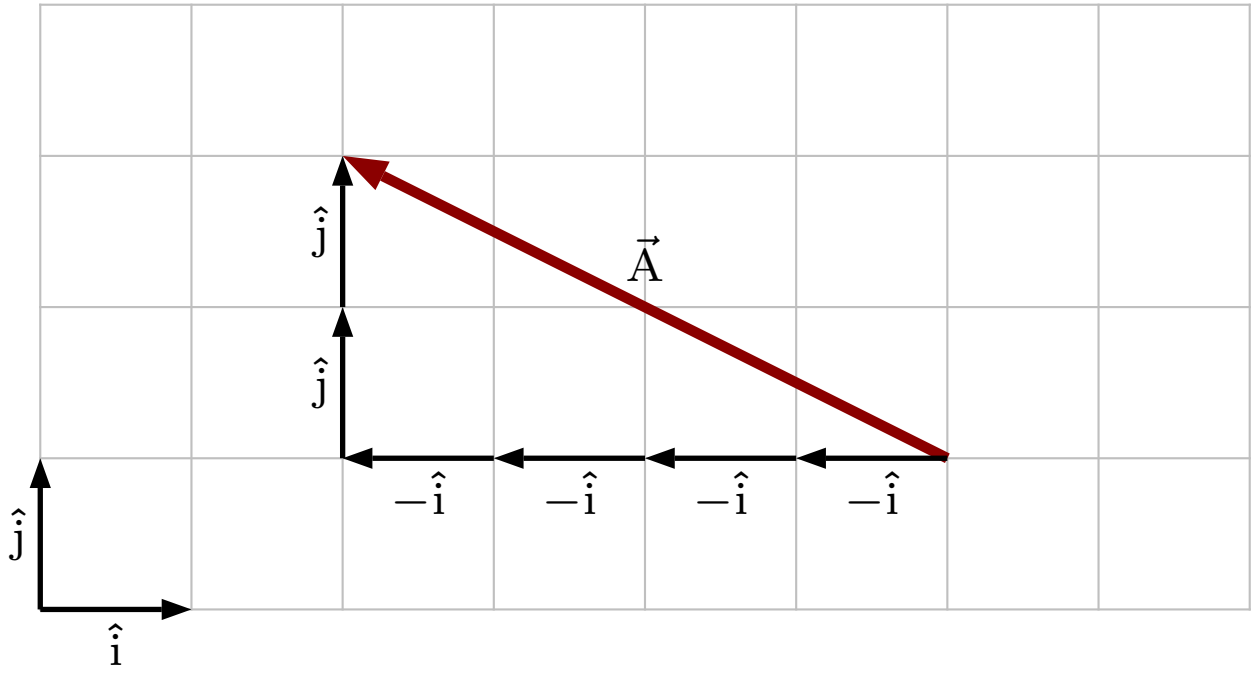
$$\vec{A} = 5\hat{i} + 2\hat{j}$$



Constructing a Vector from Unit Vectors

How the illustrated vector $\vec{\mathrm{A}}$ is decomposed into unit vectors

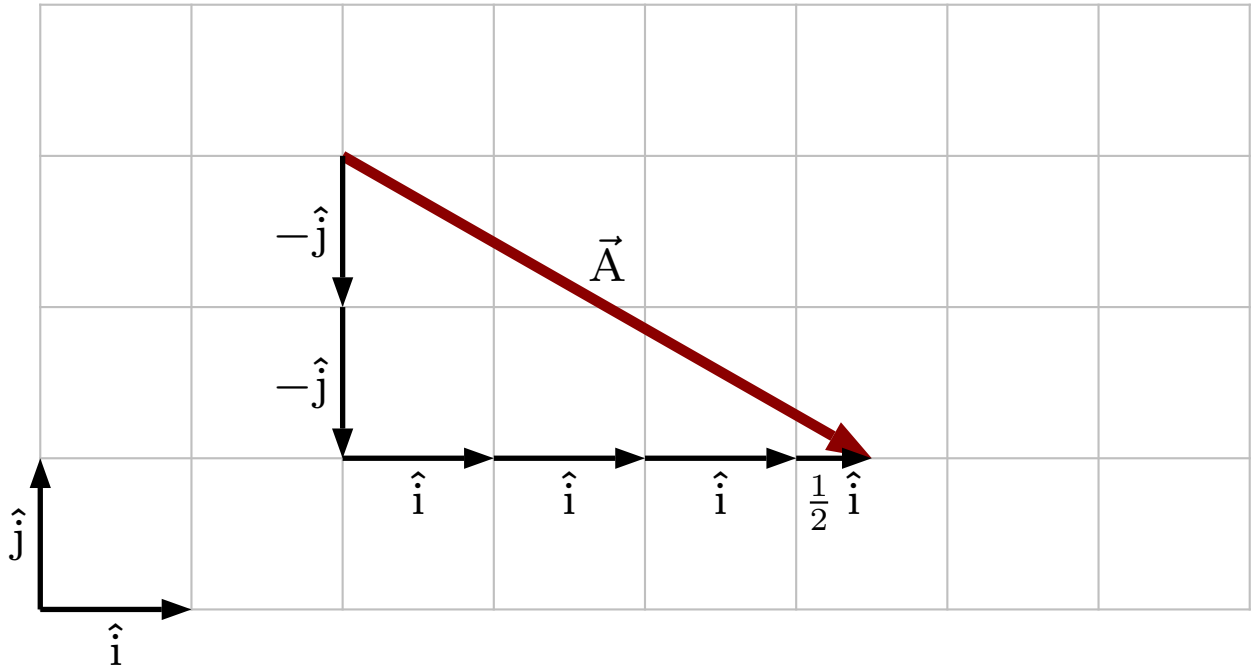
$$\vec{\mathrm{A}} = -4\hat{\mathrm{i}} + 2\hat{\mathrm{j}}$$



Constructing a Vector from Unit Vectors

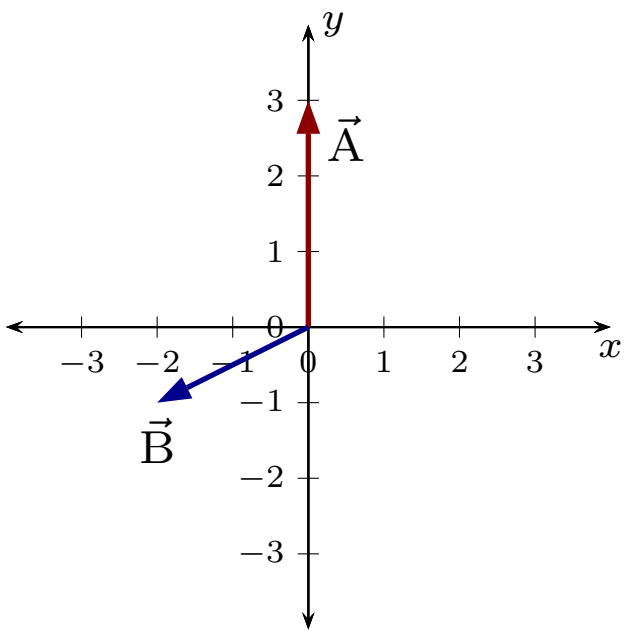
How the illustrated vector $\vec{A}$ is decomposed into unit vectors

$$\vec{A} = 3.5\hat{i} - 2\hat{j}$$



Question 1

Two vectors are illustrated.

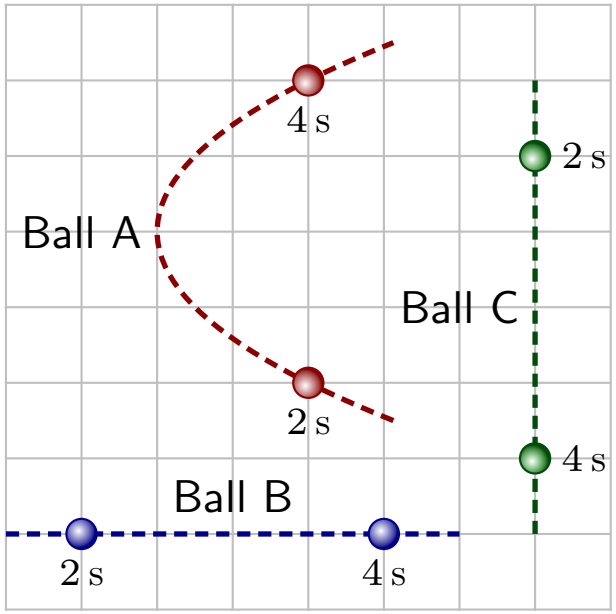


A third vector $\vec{C}$ satisfies $\vec{C} = \vec{A} - \vec{B}$. Which of the following represents $\vec{C}$?

1. $\vec{C} = -2\hat{i} + 2\hat{j}$
2. $\vec{C} = -2\hat{i} - 2\hat{j}$
3. $\vec{C} = 2\hat{i} - 2\hat{j}$
4. $\vec{C} = 4\hat{i} - 2\hat{j}$
5. $\vec{C} = -4\hat{i} + 2\hat{j}$
6. $\vec{C} = -4\hat{i} - 2\hat{j}$

Question 2

Various balls follow the illustrated trajectories.



Which balls have the same average velocity in the interval from $2\,\mathrm{s}$ to $4\,\mathrm{s}$?

1. All have the same.
2. None have the same.
3. A and B.
4. B and C.
5. A and C.