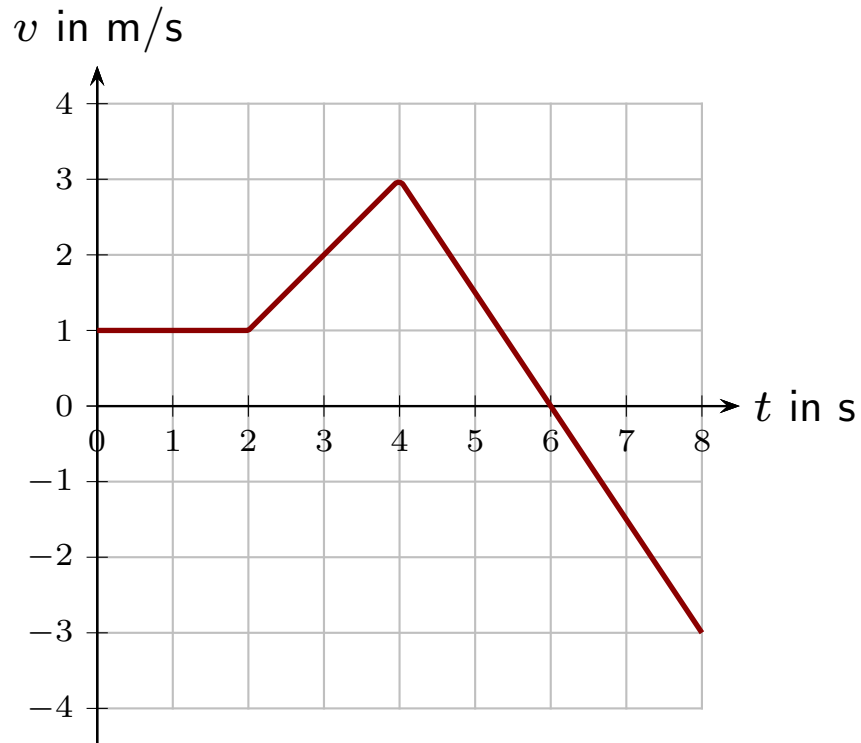


Question 1

A graph of velocity vs. time for an object moving in one dimension is illustrated.

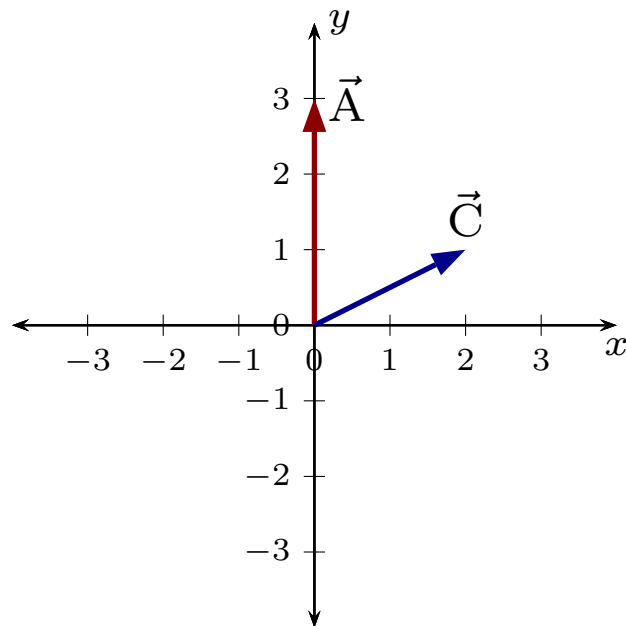


What is the displacement of the object in the interval from $t = 0$ s to $t = 8$ s?

1. -24 m
2. 0 m
3. 4 m
4. 6 m
5. 24 m

Question 2

Two vectors are illustrated.

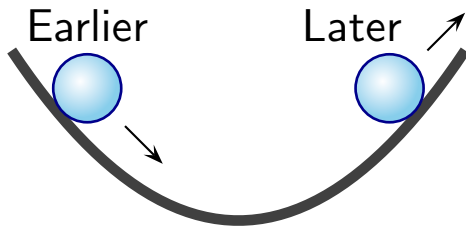


A third vector \vec{B} satisfies $\vec{C} = \vec{A} + \vec{B}$. Which of the following represents \vec{B} ?

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

Question 3

A ball of ice slides inside a bowl as illustrated. At the indicated earlier moment it slides down with speed 2.0 m/s and at the indicated later moment it slides up with speed 2.0 m/s .



Which of the following best represents the average acceleration from the earlier to the later moment?

1. $\vec{a}_{\text{avg}} = 0$.
2. $\vec{a}_{\text{avg}} \neq 0$ with direction \uparrow .
3. $\vec{a}_{\text{avg}} \neq 0$ with direction \downarrow .
4. $\vec{a}_{\text{avg}} \neq 0$ with direction \rightarrow .
5. $\vec{a}_{\text{avg}} \neq 0$ with direction \nearrow .