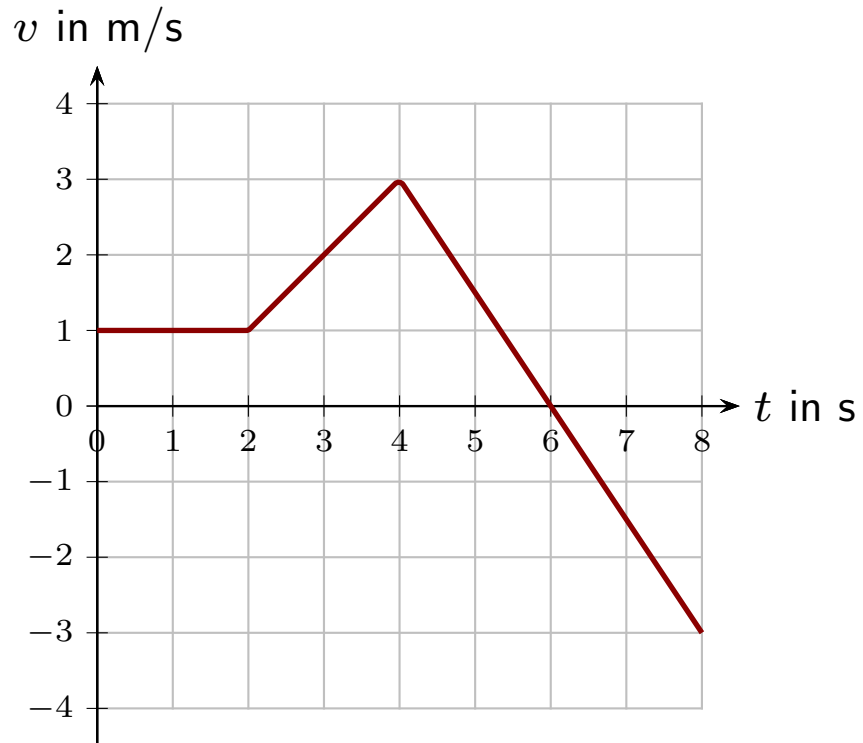


# Question 1

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

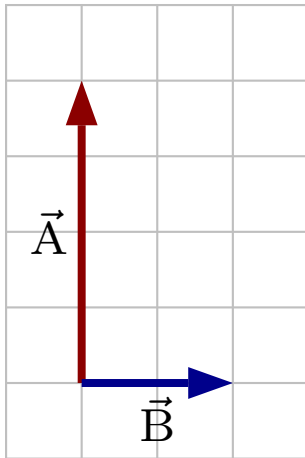


What is the displacement of the object in the interval from  $t = 0$  s to  $t = 8$  s?

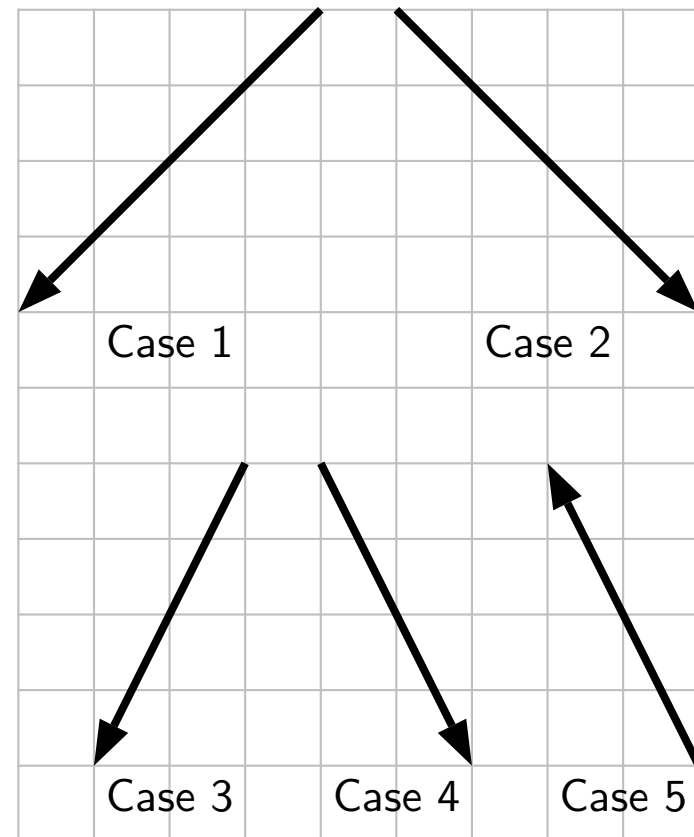
1.  $-24$  m
2.  $0$  m
3.  $4$  m
4.  $6$  m
5.  $24$  m

## Question 2

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

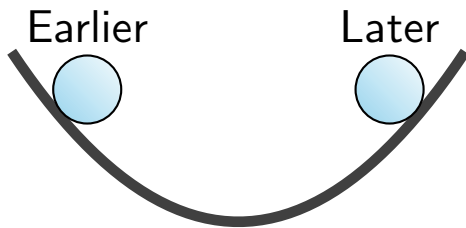


Which of the following best represents  $2\vec{B} - \vec{A}$ ?



## Question 3

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



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  $\nearrow$ .