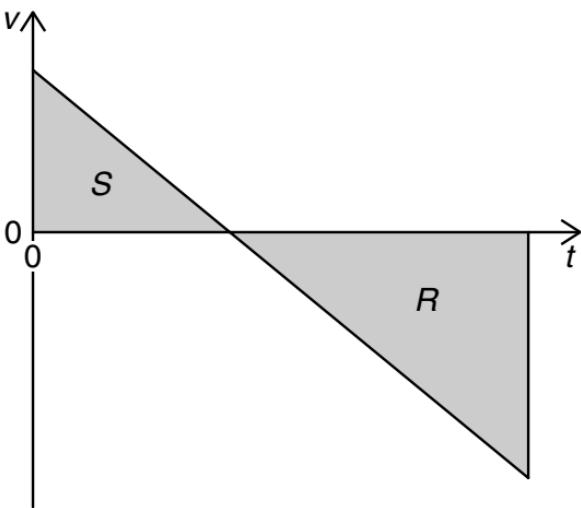


- 8** A stone is thrown upwards from the top of a cliff. After reaching its maximum height, it falls past the cliff-top and into the sea.

The graph shows how the vertical velocity  $v$  of the stone varies with time  $t$  after being thrown upwards.  $R$  and  $S$  are the magnitudes of the areas of the two triangles.



What is the height of the cliff-top above the sea?

- A**  $R$     **B**  $S$     **C**  $R + S$     **D**  $R - S$

- 9** Two similar spheres, each of mass  $m$  and travelling with speed  $v$ , are moving towards each other.