

Intermediate Value Theorem

1. What must you prove in order to invoke the Intermediate Value Theorem?
2. Draw a picture illustrating the Intermediate Value Theorem.
3. Let $v(t)$ represent the velocity of an object moving along the x -axis, and be continuous everywhere. For $0 < t < 40$, must there be a time when $v(t) = -15$? Justify your answer.

t (sec)	0	10	20	30	40
$v(t)$ (m/sec)	-20	-30	-20	-10	0