

MISSION E: STRANDED SURFER DUDE

TRAPPED UNDER A CLIFF IS A SURFER WHOSE BOARD SNAPPED WHILE SURFING. HE FOUND A LITTLE SHELTERED ROCK AND MADE A 911 CALL TO BE RESCUED. AS THE RESCUE TEAM ARRIVED THEY RECEIVED A TEXT FROM THE SURFER SAYING THAT HE WAS AN EPILEPTIC AND HE FELT THAT A SEIZURE WAS COMING ON. THE TEAM FIGURED THAT THE QUICKEST WAY TO GET TO THE SURFER WAS A CLIFF JUMP. HOWEVER, AS THE WAVES COME IN AND OUT THE DEPTH CHANGES. FOR A SAFE JUMP THE TEAM MUST CALCULATE WHEN THE RESCUER SHOULD MAKE THE JUMP. THE TEAM RECEIVED DATA TELLING THEM THAT AT THE LOW POINT, THE DEPTH IS 0.1m , AND AT THE HIGH POINT, 18.6 SECONDS LATER, THE DEPTH IS 6.1m .

It's your mission to rescue the surfer but first you must work out the following details:

- I. Write the equation that expresses your height, in metres, as a function of the elapsed time, in seconds.
- II. Sketch the function.
- III. Estimate the earliest time, after lowest depth of water, the rescuer can make the jump if at least 2m of water is needed.

