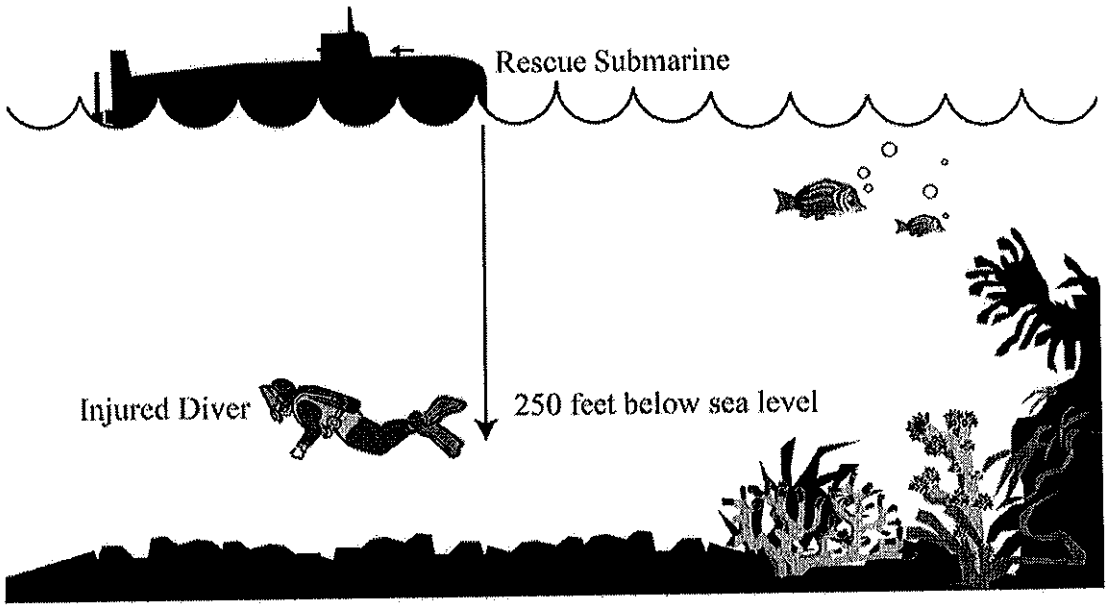
Department of Education

I Can Do This! Systems of Equations – Grade Eight

Lost at Sea

You are part of the rescue team in a ship at sea. One of your divers is 250 feet below sea level, and she injured herself. She only has a 7 minute supply of air in her tank, and can only rise towards the surface at a rate of 10 feet per minute. You are sending down a rescue sub. The sub can descend at a rate of 30 feet per minute.

Note: Normally, the diver would take safety stops when ascending to avoid suffering from the bends, but in this emergency, the diver will be placed in a decompression chamber when they get her to the surface, if they get her in time.



1. At what depth, to the nearest foot, will the two meet?

2. Will the diver still have any oxygen left in her tank when the sub gets to her?

Attachment B (Continued)
Lost at Sea - Is there enough time to save the diver?

3. On a sheet of graph paper or with a graphing calculator, make a graph that represents this problem.

4. Explain how you arrived at your answers for questions #1 and #2.

5. If possible, write an equation to model this problem.