

## C12 - 4.2 - Train Pythag Related Rates HMK

Train 'a' leaves Vancouver heading North at 8 m/s and train 'b' leaves heading West at 6 m/s? How far are they a part after 5 minutes? What is the speed at which the trains are moving apart at that time?

Train 'a' leaves Whistler, 100 km North of Vancouver, heading South at 12 m/s and train 'b' leaves Vancouver heading West at 9 m/s? How far are they a part after 5 minutes? What is the speed at which the trains are moving apart at that time?

## C12 - 4.2 - Ladder Pythag Related rates HMK

The top of a 20 ft ladder slides down a wall at a rate of 2 ft/s. At what rate is the base of the ladder sliding away from the wall when the latter is at a height of 6 ft on the wall.

What is the rate the angle at the bottom of the ladder changing?

## C12 - 4.2 - Similar Triangles/Cos Law Related Rates Notes

A 6 foot tall man is walking away from a 30 foot lamp post at 2 m/s. What is the rate of change in the size of his shadow when he is 50 feet from the lamp post; and is his shadow getting bigger or smaller.

A float plane rising at  $45^\circ$  above the horizontal flies over a boat at an altitude of 200 m at 80 m/s. How fast is the distance between the boat and the plane increasing after five seconds?