

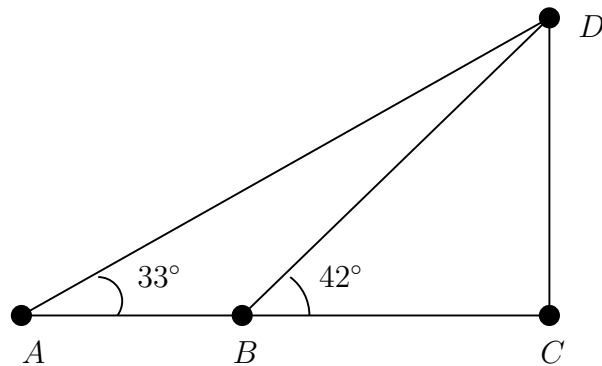
Quiz Four

		Hui	Santosh
Section	10:30	BA	BC
(circle one)	11:30	BB	BD

No notes. No calculators.

Simplify your answers. Show your work. Please put a box around YOUR FINAL ANSWER. There are 15 points on this quiz. Also, notice that your answers may depend on various trigonometric functions ($\sin(\)$ or $\cos(\)$, for example). Feel free to leave these functions in your answer.

For the problems on this page, consider the following picture.



Assume the line segment from B to C has length 10.

1 (3 points) Find the length of the line segment from C to D .

2 (3 points) Find the length of the line segment from A to B .

Inspired by the Olympics, Peter has taken up speed skating. He is practicing his turns by skating counter-clockwise in a circle. Suppose this circle has radius 25 feet, and it takes Peter 30 seconds to do a complete lap.

3 (3 points) How fast, in feet per second, is Peter skating?

4 (4 points) Suppose we impose a coordinate system so that the center of the track is at the origin and, at $t = 0$, Peter is crossing the x -axis. Find equations for Peter's position after t seconds.

5 (2 points) Peter crashes after 48 seconds. Where did he crash (in terms of the coordinate system used above)?