

§ 5.7 The Cosine Law Exit Ticket

A police officer is on his cell phone trying to lure a criminal into a trap. The police officer is 255 km from the secure satellite orbiting the Earth while the criminal is 310 km from the same satellite. If the signal that bounces off the satellite makes an angle of 4° , how far is the police officer from the criminal?

While on a summer trip of a lifetime, Dominic decides to backpack 1663 km along the Arabian coast from Mumbai (formerly Bombay) to Kanyakumari Beach (the southern tip of the Indian subcontinent) and then trek back north along the Bay of Bengal, 710 km to Kalkota (formerly Calcutta). He will then hike 1187 km across the Indian subcontinent back to Mumbai. From Kanyakumari Beach, what angle spans the cities of Mumbai and Kalkota?