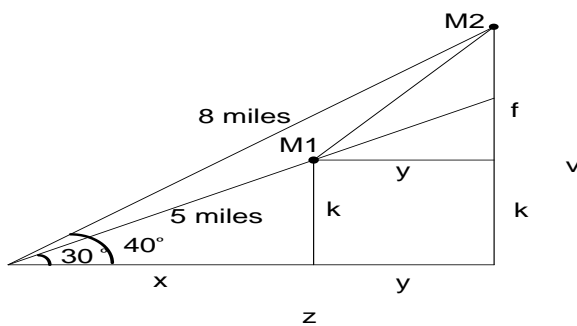# Answer on Question #77611 – Math – Trigonometry

Question

A mountain is seen in a direction 30° north of east and is known to be 5 miles away from another mountain as seen in a direction 40° north of east 8 mile distance. how far apart are the two?

Solution

$\cos 30° = \frac{\sqrt{3}}{2} = \frac{x}{5}; \quad x = 2.5\sqrt{3}$

$\sin 30° = \frac{1}{2} = \frac{k}{5}; \quad k = 2.5$

$\cos 40° = 0.77 = \frac{z}{8}; z = 6.16$

$\sin 40° = 0.64 = \frac{v}{8}; v = 5.12$

$z - x = y; \quad y = 1.83$

$v - k = f; \quad f = 2.62$

$r = M1M2 = \sqrt{y^2 + f^2} = 3.2 \, miles$

Answer: $r = 3.2 \, miles$