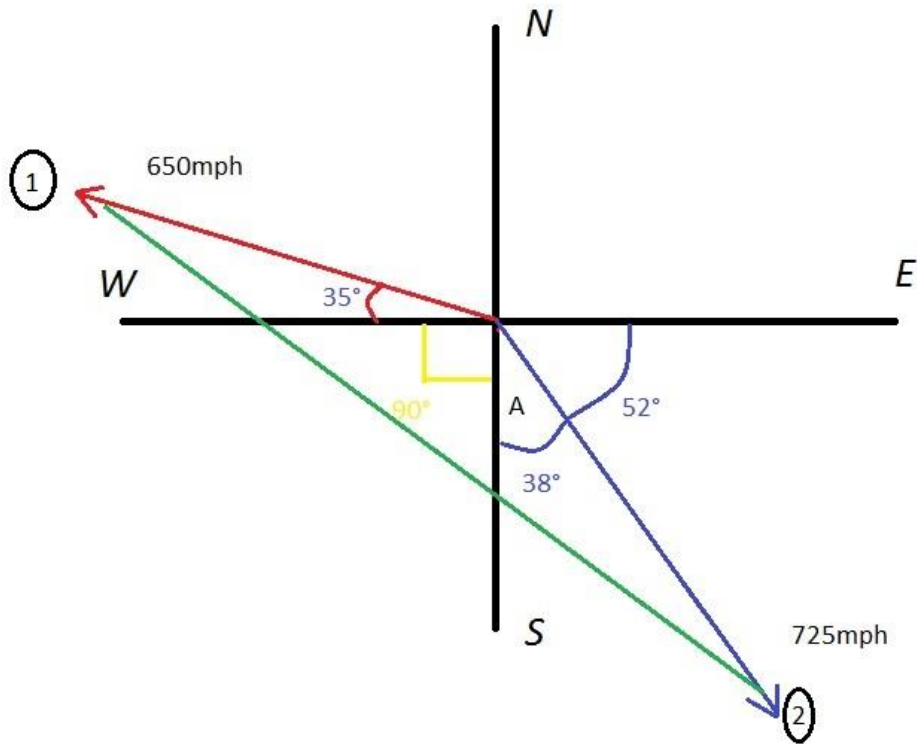# Answer on Question #58627 – Math – Trigonometry

Question

2 aircraft leave same spot at same time. 650mph W 35° S vs 725mph E 52° S. What distance will there between them in 2hrs?

Solution

$$\angle A = 90° - 52° = 38°$$

The first aircraft flew the following distance:

$L_1 = L_{red} = 650mph \cdot 2hrs = 1300m.$

The second aircraft flew the following distance:

$L_2 = L_{blue} = 725mph \cdot 2hrs = 1450m.$

The distance $L = L_{green}$ between aircrafts in 2hrs can be found using the law of cosines:

$$L = L_{green} = \sqrt{L_1^2 + L_2^2 - 2L_1L_2\cos(\widehat{L_1;L_2})} =$$

$$= \sqrt{1300^2 + 1450^2 - 2 * 1300 * 1450 * \cos(38° + 90° + 35°)} \approx 2719.9m.$$

Answer: 2719.9m.