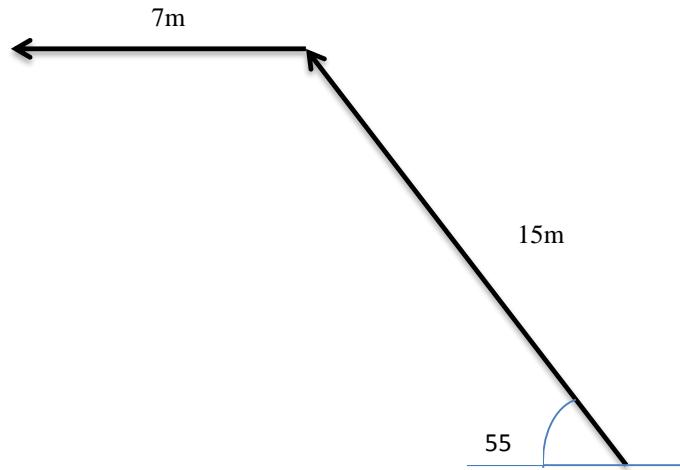


Find the resultant displacement of a bear searching for berries on the mountain. The bear heads  $55.0^\circ$  north of west for 15.0 m; then it turns and heads to the west for another 7.00 m



Displacement of the bear to north equals:

$$d_n = 15 * \sin 55^\circ = 12.29 \text{ m}$$

Displacement of the bear to west equals:

$$d_w = 15 * \cos 55^\circ + 7 = 15.60 \text{ m}$$

Therefore, the resultant displacement equals (using Pythagorean theorem):

$$d = \sqrt{d_n^2 + d_w^2} = 19.9 \text{ m}$$

Answer: 19.9 m