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|  | Problem 2.10  For the stake of Prob. 2.8, knowing that the tension in one rope is 120 N, determine by trigonometry the magnitude and direction of the force **P** so that the resultant is a vertical force of 160 N.  **PROBLEM 2.8** A stake is being pulled out of the ground by means of two ropes as shown. Knowing that *α*  30°, determine by trigonometry (*a*) the magnitude of the force **P** so that the resultant force exerted on the stake is vertical, (*b*) the corresponding magnitude of the resultant. |

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| Solution    Using the laws of cosines and sines:    And  angle 4◄ |