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|  | Problem 2.28  A collar that can slide on a vertical rod is subjected to the three forces shown. Determine (*a*) the required value of *α* if the resultant of the three forces is to be horizontal, (*b*) the corresponding magnitude of the resultant. |

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| Solution  (1)  (2)  (*a*) For **R** to be horizontal, we must have  We make  in Eq. (2):    Solving by use of the quadratic formula:  ◄  (*b*) Since using Eq. (1):    ◄ |