Dev owns a small company which produces bottles of juice. He uses two machines, X and Y, to fill empty bottles with juice. Dev is investigating the volumes of juice in the bottles. He chooses a random sample of 35 bottles filled by machine X and a random sample of 60 bottles filled by machine Y. The volumes of juice, x and y respectively, measured in suitable units, are summarised by

$$\Sigma x = 30.8, \qquad \Sigma x^2 = 29.0, \qquad \Sigma y = 62.4, \qquad \Sigma y^2 = 76.8.$$

Dev claims that the mean volume of juice in bottles filled by machine Y is greater than the mean volume of juice in bottles filled by machine X. A test at the α% significance level suggests that there is sufficient evidence to support Dev's claim.

Find the set of possible values of α. [9]