

The straight lines represented by  $(y - mx)^2 = a^2(1 + m^2)$  and  $(y - nx)^2 = a^2(1 + n^2)$  form a

A rectangle

B rhombus

C trapezium

D none of these

Correct option is B)

$$(y - mx)^2 = a^2(1 + m^2)$$

$$y - mx = \pm a\sqrt{1 + m^2}$$

$$\frac{y}{|a\sqrt{1 + m^2}|} - \frac{x}{\left|\frac{a\sqrt{1 + m^2}}{m}\right|} = 1 \text{ -----(i)}$$

Similarly

$$(y - nx)^2 = a^2(1 + n^2)$$

$$y - nx = \pm a\sqrt{1 + n^2}$$

$$\frac{y}{|a\sqrt{1 + n^2}|} - \frac{x}{\left|\frac{a\sqrt{1 + n^2}}{n}\right|} = 1 \text{ -----(ii)}$$

From the intercept form of i and ii we get to know that the following four lines create a rhombus.