

6(a)

$$x = -a$$

$$y = \frac{(x+a)(x-a) + a^2 + a}{x+a} = x - a + \frac{a^2 + a}{x+a}$$

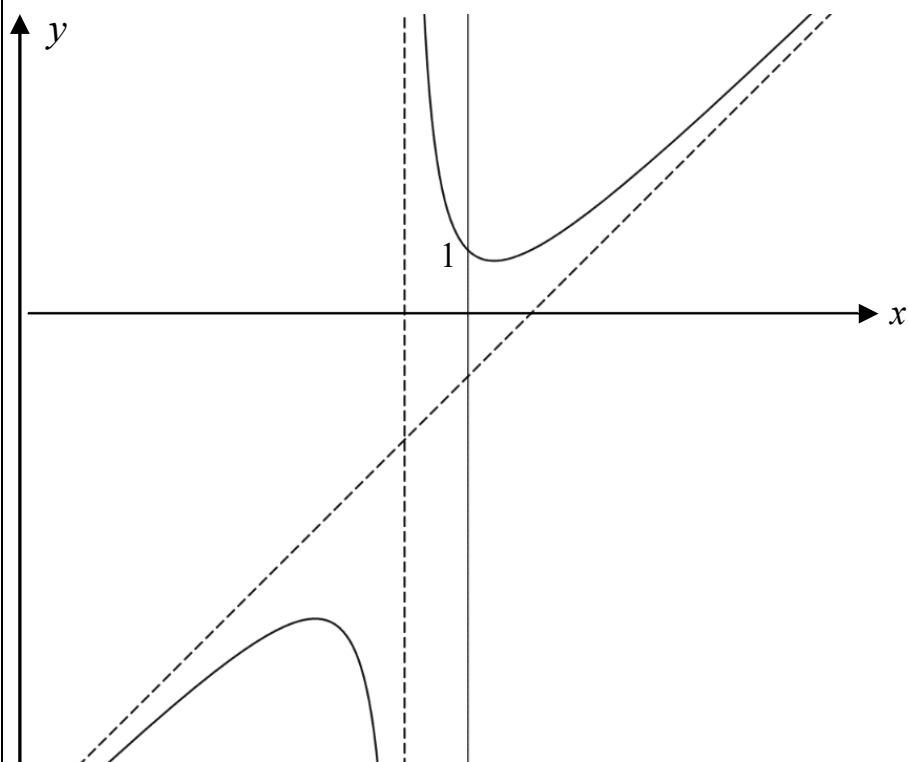
$$y = x - a$$

6(b)

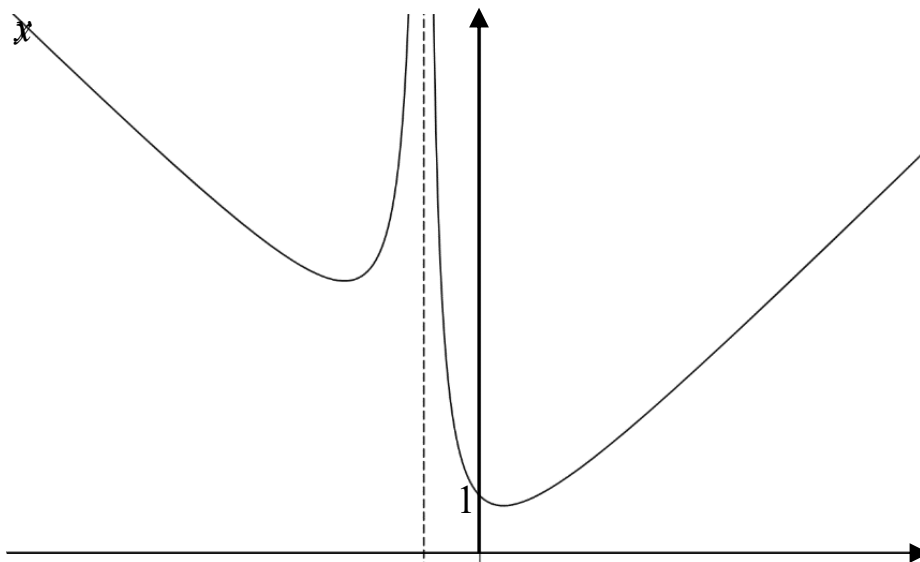
$$\frac{dy}{dx} = 1 - (a^2 + a)(x+a)^{-2} = 0 \text{ or } x^2 + 2ax - a = 0$$

$$x = -a \pm \sqrt{a^2 + a}$$

6(c)



6(d)



6(e)

$$\frac{x^2 + a}{x + a} = a$$

$$x^2 - ax + a - a^2 = 0$$

$$\text{Or } \frac{x^2 + a}{x + a} = -a \Rightarrow x^2 + ax + a + a^2 = 0$$

$$a^2 - 4(a - a^2) = 5a^2 - 4a > 0$$

$$a > \frac{4}{5}.$$