Determine the signs of the roots of the equation $x^2 + (\sqrt{3} + \sqrt{2}) x - 1 = 0$.

**Solution:**
The discriminant of the equation is $D = (\sqrt{3} + \sqrt{2})^2 + 4 > 0$. Therefore the equation has two distinct real roots $x_1$ and $x_2$.
From Vieta’s formulas we, now, have that

$$x_1 \cdot x_2 = -1.$$  

Since $x_1 \cdot x_2 < 0$, it follows that one of the roots of the equation is negative and one is positive.