(7) $9x^2 + \frac{3}{4}x - \sqrt{2} = 0$

$\Rightarrow (3x)^2 + 2 \times 3x \times \frac{1}{8} + \left(\frac{1}{8}\right)^2 - \left(\frac{1}{8}\right)^2 - \sqrt{2} = 0$

(B) $\frac{1}{64}$

(8) $2x^2 - \sqrt{5}x + 1 = 0$

$D = b^2 - 4ac$

$= (-\sqrt{5})^2 - 4 \times 2 \times 1$

$= 5 - 8$

$= -3$

$\because D < 0$

no real roots (C)

(9) (A) $2x^2 - 3\sqrt{2}x + \frac{9}{4} = 0$

$D = (-3\sqrt{2})^2 - 4 \times 2 \times \frac{9}{4}$

$= 18 - 18$

$= 0$

(B) $x^2 + x - 5 = 0$

$D = 1^2 - 4 \times 1 \times -5$

$= 1 + 20$

$= 21$

$D > 0$ (B)

(10) (A) $x^2 - 4x + 3\sqrt{2} = 0$

$D = (-4)^2 - 4 \times 1 \times 3\sqrt{2}$

$= 16 - 12\sqrt{2}$

$= 16 - 12 \times 1.73$

$= 16 - 20.76$

$= -4.76$

$\because D < 0$

no real roots

(A)

(11) $(x+1)^2 - x^2 = 0$

$\Rightarrow x^2 + 1 + 2x - x^2 = 0$

$\Rightarrow 2x = -1$

$\Rightarrow x = -\frac{1}{2}$

(D) one real root