



a.  $3x^2 + 2x + k = 0$

When  $\Delta = b^2 - 4ac = 0$  there are no real roots

$$\Delta = 0$$

$$\Delta = 2^2 - (4 \times 3 \times k) = 0$$

$$0 = 4 - 4ac$$

$$\frac{-4}{-4a} = \frac{-4ac}{-4a}$$

$$-4a$$

$$k = \frac{-4}{-4(3)} = \frac{-4}{-12}$$

$$k = \frac{1}{3}$$

$\therefore$  When  $k = \frac{1}{3}$  there are no real roots

b

i.  $\angle ABC = 180 - 2x$

$\triangle LCM$  is an isosceles triangle therefore  $\angle LMC = x^\circ$

(equal opposite angles of an isosceles triangle)

$$\angle LCM = 180 - 2x^\circ = 180 - 2x$$

~~180 - 2x~~

~~$\angle CAB = 180 - 2x$~~   $\angle CAB = 180 - 2x$