Thus quadrilateral SKDC is inscribed in a circle of diameter [KC] since it is formed of two right triangles sharing the same hyp. [KC]

radius = $\frac{\text{diameter}}{2} = \frac{KC}{2}$

$= \frac{\sqrt{10}}{2}$

and center the mid pt of [KC]

$x_{center} = \frac{x_K + x_C}{2}$

$= \frac{5}{2}$.

$y_{center} = \frac{y_K + y_C}{2}$

$= \frac{3}{2}$

center $\left(\frac{5}{2}, \frac{3}{2}\right)$

3) To determine relative position of G w.r.t (C)
we have to compare radius of (C) with distance btw G & center of (C)
So, distance btw G & center of (C) $= \sqrt{\left(\frac{5}{2}-1\right)^2+\left(\frac{3}{2}-1\right)^2}$

$= \sqrt{\frac{9}{4}+\frac{1}{4}}$

$= \frac{\sqrt{10}}{2}$ which is equal to radius of (C).

Thus, G(1,1) belongs to (C)

4a) Slope of (CD) $= \frac{y_C - y_D}{x_C - x_D}$

$= \frac{3-0}{3-3}$

which is rejected.

then its eqn is of the form
$x = cst$
& C(3,0) belongs to (CD)
Thus, $\boxed{(CD):\ x = 3}$

Since (CD) is parallel to y-axis (proved)