c) $SF = \sqrt{(x_F - x_S)^2 + (y_F - y_S)^2}$

$= \sqrt{(0 - 0{,}5)^2 + (-0{,}5 + 3{,}5)^2}$

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

$= \sqrt{\frac{17}{4}}$ $\frac{1}{4}$

$SF = \frac{\sqrt{17}}{2}$ cm $< \frac{\sqrt{58}}{2}$ since $\sqrt{17} < \sqrt{58}$ $\frac{1}{4}$

So F is interior to (C) since its distance from the center is less than the radius. $\frac{1}{4}$

c) (T) is tangent to (C) at B so $(T) \perp (SB)$ at B $\frac{1}{4}$

$a_{(T)} \times a_{(SB)} = -1$

$a_{(T)} \times \left(-\frac{3}{7}\right) = -1$ $\frac{1}{4}$

$a_{(T)} = \frac{7}{3}$

$a_{(SB)} = \frac{y_B - y_S}{x_B - x_S}$ $\frac{1}{4}$

$= \frac{0 + \frac{3}{2}}{-3 - \frac{1}{2}}$

$= \frac{\frac{3}{2}}{-\frac{7}{2}}$ so $a_{(SB)} = -\frac{3}{7}$

(T) passes through B so the coordinates of B verify the equation of (T)

$y - y_B = \frac{7}{3}(x - x_B)$ $\frac{1}{2}$

$y - 0 = \frac{7}{3}(x + 3)$

$\boxed{(T);\ y = \frac{7}{3}x + 7}$