- MAB is an inscribed Δ in (c) (M, A, and B belong to (c) -given-) having one of its sides the diameter [AB] (given)

Then, $\hat{AMB} = 90°$ (inscribed angle facing diameter)

Thus, MAB is semi-equilateral at M having a 90° and a 30° angle (proved).

b) MAB is semi-equilateral at M (proved) So,

$MB = \frac{hyp}{2} = \frac{AB}{2} = \frac{12}{2}$ (d = 2r where r = 6cm -given)

$= 6\,cm$ (side facing 30°)

$AM = \frac{hyp\sqrt{3}}{2} = \frac{AB\sqrt{3}}{2} = \frac{12\sqrt{3}}{2} = 6\sqrt{3}\,cm$ (side facing 60°)

3) a) [MF) is tangent to (c) at M (given) and [BF) is tangent to (c) at F (given), and they both intersect at F (given)

then, F is equidistant from M and B (tangent theorem ①: the exterior point is equidistant from the 2 points of tangency).

So, $\boxed{FM = FB}$

- (AE) is tangent to (c) at A (given) and [ME) is tangent to (c) at M (given).

So, E is equidistant from A and M (tangent theorem ①)

then $\boxed{EA = EM}$

but EF = EM + MF (E, M, and F are collinear -given-)

thus, EF = EA + FB (by comparison)