

$$X^2 = 1440000 + 490000 - 1680000 \left(-\frac{\sqrt{2}}{2}\right) \neq$$

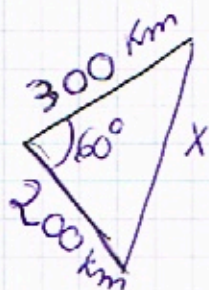
$$X^2 = 1930000 + 1.187.939,39$$

$$X = \sqrt{3117.939,39} \approx 1765,77 \text{ m}$$

$X > 0$

La distància del castell a la casa és aproximadament de 1765,77 m

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Teorema del cosinus

$$X^2 = 200^2 + 300^2 - 2 \cdot 200 \cdot 300 \cos 60^\circ$$

$$X^2 = 40000 + 90000 - 2 \cdot 60000 \cdot \frac{1}{2}$$

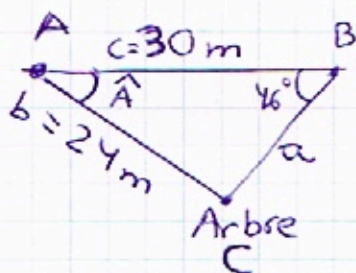
$$X^2 = 130000 - 60000$$

$$X = \sqrt{70000} = 100\sqrt{7} \approx 264,58 \text{ km}$$

$X > 0$

Com  $250 \text{ km} < 264,58 \text{ km}$ , No podran posar-se en contacte per ràdio.

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$$\hat{A} = ?$$

$$a = ?$$

Teorema del cosinus:  $b^2 = a^2 + c^2 - 2ac \cos \hat{B}$

$$24^2 = a^2 + 30^2 - 2a \cdot 30 \cdot \cos(46^\circ)$$

$$576 = a^2 + 900 - 41,68a$$

$$a^2 - 41,68a + 324 = 0$$

$$a = \frac{41,68 \pm \sqrt{41,68^2 - 4 \cdot 324}}{2} = \frac{41,68 \pm \sqrt{441,22}}{2}$$

$$= \begin{cases} 31,34 \text{ m} \\ 10,34 \text{ m} \end{cases}$$