

ΛΥΣΗ

α)

$$\left. \begin{array}{l} B\Gamma^2 = 8^2 = 64 \\ AB^2 + A\Gamma^2 = 6^2 + 6^2 = 36 + 36 = 72 \end{array} \right\} \text{ \u03b1\u03c1\u03b1 } B\Gamma^2 < AB^2 + A\Gamma^2$$

\u03c9\u03c0\u03c4\u03b5 \u03ba\u03b9 $\widehat{A} < 90^\circ$.

\u038c\u03bc\u03c9\u03c2 \u03b7 \widehat{A} \u03b5\u03b9\u03bd\u03b1 \u03b7 \u03bc\u03b5\u03b3\u03b1\u03bb\u03c5\u03c4\u03b5\u03c1\u03b7 \u03b3\u03c9\u03bd\u03b9\u03ac \u03c4\u03bf\u03c5, \u03b1\u03c6\u03cc\u03c5 \u03b2\u03c1\u03b9\u03c3\u03ba\u03b5\u03c4\u03b1\u03b9 \u03b1\u03c0\u03b5\u03bd\u03b1\u03bd\u03c4\u03b9 \u03b1\u03c0\u03cc \u03c4\u03b7\u03bd \u03bc\u03b5\u03b3\u03b1\u03bb\u03c5\u03c4\u03b5\u03c1\u03b7 \u03c0\u03bb\u03b5\u03c5\u03c1\u03ac \u03c4\u03bf\u03c5, \u03c9\u03c0\u03c4\u03b5 \u03ba\u03b9 \u03cc \u03b1\u03bb\u03bb\u03b5\u03c2 \u03b3\u03c9\u03bd\u03b9\u03b5\u03c2 \u03b8\u03b1 \u03b5\u03b9\u03bd\u03b1 \u03cc\u03be\u03b9\u03b5\u03c2, \u03b1\u03c1\u03b1 \u03c4\u03bf \u03c4\u03c1\u03b9\u03b3\u03c9\u03bd\u03cc \u03b5\u03b9\u03bd\u03b1 \u03cc\u03be\u03c5\u03b3\u03c9\u03bd\u03b9\u03cc.

\u03b2) \u039c\u03b5 \u03b5\u03c6\u03b1\u03c1\u03bc\u03bf\u03b3\u03b7 \u03c4\u03bf\u03c5 \u03c4\u03cd\u03c0\u03bf\u03c5 \u03c4\u03bf\u03c5 \u038c\u03c1\u03c9\u03bd\u03b1 $(AB\Gamma) = \sqrt{\tau \cdot (\tau - \alpha) \cdot (\tau - \beta) \cdot (\tau - \gamma)}$

\u03ba\u03b9 $\tau = \frac{\alpha + \beta + \gamma}{2} = \frac{6 + 8 + 6}{2} = 10$, \u03c0\u03c1\u03cc\u03ba\u03cd\u03c0\u03c4\u03b5\u03b9

$$(AB\Gamma) = \sqrt{10 \cdot (10 - 6) \cdot (10 - 8) \cdot (10 - 6)} = \sqrt{10 \cdot 4 \cdot 2 \cdot 4} = 8\sqrt{5} \text{ \u03c4.}\mu.$$

\u03b3)

i. \u0399\u03c3\u03c7\u03cd\u03b5\u03b9 $(AB\Gamma) = \tau \cdot \rho$ \u03c9\u03c0\u03c4\u03b5 $8\sqrt{5} = 10 \cdot \rho$ \u03b7 $\rho = \frac{8\sqrt{5}}{10} = \frac{4\sqrt{5}}{5}$.

ii. \u038c\u03bc\u03cc\u03b9\u03c9\u03c2 $(AB\Gamma) = \frac{\alpha \cdot \beta \cdot \gamma}{4 \cdot R}$ \u03b7 $8\sqrt{5} = \frac{6 \cdot 8 \cdot 6}{4 \cdot R}$ \u03b7 $R = \frac{9\sqrt{5}}{5}$.