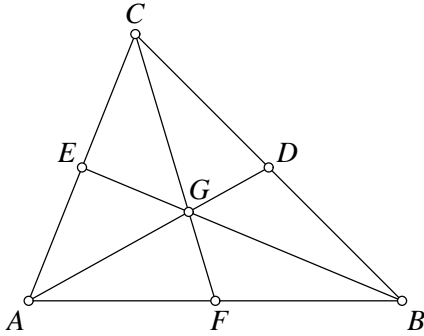


### T.1.7 Formeln – Schwerpunkt



$$AF = FB = \frac{c}{2}, \quad BD = DC = \frac{a}{2}, \quad CE = EA = \frac{b}{2},$$

$$AF + BD + CE = FB + DC + EA = s,$$

$$AD = m_a = \sqrt{\frac{b^2 + c^2}{2} - \frac{a^2}{4}}, \quad BE = m_b = \sqrt{\frac{c^2 + a^2}{2} - \frac{b^2}{4}},$$

$$CF = m_c = \sqrt{\frac{a^2 + b^2}{2} - \frac{c^2}{4}},$$

$$AD^2 + BE^2 + CF^2 = m_a^2 + m_b^2 + m_c^2 = \frac{3}{4}(a^2 + b^2 + c^2),$$

$$\sin \angle ACF = \frac{c \sin \alpha}{\sqrt{2(a^2 + b^2) - c^2}}, \quad \sin \angle BCF = \frac{c \sin \beta}{\sqrt{2(a^2 + b^2) - c^2}},$$

$$\sin \angle BAD = \frac{a \sin \beta}{\sqrt{2(b^2 + c^2) - a^2}}, \quad \sin \angle CAD = \frac{a \sin \gamma}{\sqrt{2(b^2 + c^2) - a^2}},$$

$$\sin \angle CBE = \frac{b \sin \gamma}{\sqrt{2(c^2 + a^2) - b^2}}, \quad \sin \angle ABE = \frac{b \sin \alpha}{\sqrt{2(c^2 + a^2) - b^2}},$$

$$AG = \frac{2}{3} AD, \quad BG = \frac{2}{3} BE, \quad CG = \frac{2}{3} CF,$$

$$DG = \frac{1}{3} AD, \quad EG = \frac{1}{3} BE, \quad FG = \frac{1}{3} CF.$$

(Wird fortgesetzt.)