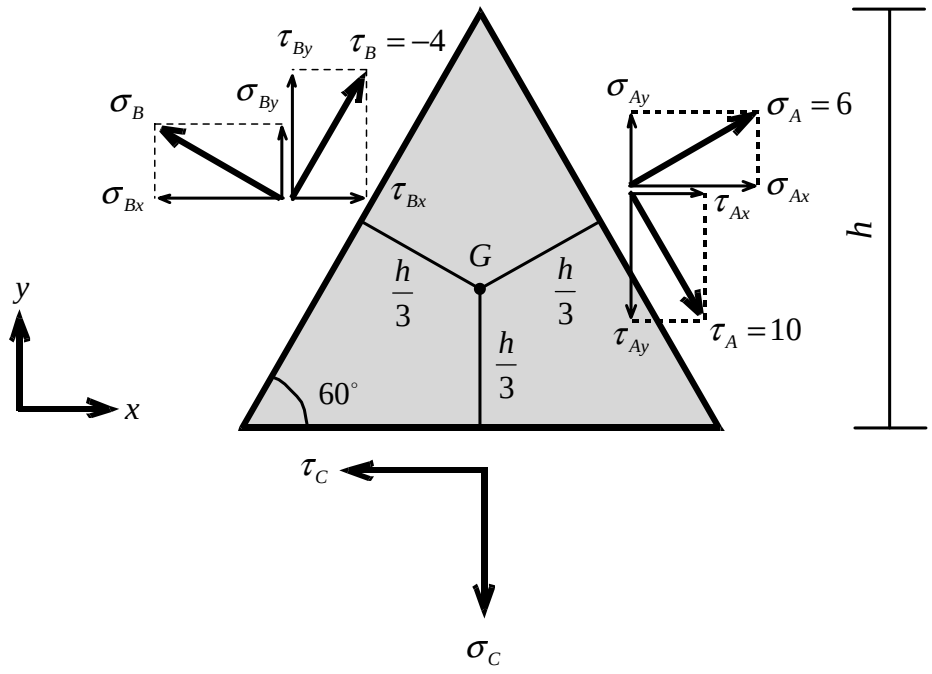
2.




正三角形の重心 $G$ 点周りのモーメントのつりあいより

$$\tau_A \cdot \frac{h}{3} + \tau_B \cdot \frac{h}{3} + \tau_C \cdot \frac{h}{3} = 0$$
$$\tau_A + \tau_B + \tau_C = 0$$
$$10 - 4 + \tau_C = 0$$
$$\tau_C = -6\left(N / mm^2\right)$$

$x$ 方向の力のつりあいより

$$\sigma_{Ax} + \tau_{Ax} - \sigma_{Bx} + \tau_{Bx} - \tau_C = 0$$
$$\sigma_A \cos 30^\circ + \tau_A \cos 60^\circ - \sigma_B \cos 30^\circ + \tau_B \cos 60^\circ - \tau_C = 0$$
$$6 \cdot \frac{\sqrt{3}}{2} + 10 \cdot \frac{1}{2} - \sigma_B \cdot \frac{\sqrt{3}}{2} + (-4) \cdot \frac{1}{2} - (-6) = 0$$
$$\sigma_B = 6 + 6\sqrt{3}\left(N / mm^2\right)$$

$y$ 方向の力のつりあいより

$$\sigma_{Ay} - \tau_{Ay} + \sigma_{By} + \tau_{By} - \sigma_C = 0$$
$$\sigma_A \sin 30^\circ - \tau_A \sin 60^\circ + \sigma_B \sin 30^\circ + \tau_B \sin 60^\circ - \sigma_C = 0$$
$$6 \cdot \frac{1}{2} - 10 \cdot \frac{\sqrt{3}}{2} + \left(6 + 6\sqrt{3}\right) \cdot \frac{1}{2} + (-4) \cdot \frac{\sqrt{3}}{2} - \sigma_C = 0$$
$$\sigma_C = 6 - 4\sqrt{3}\left(N / mm^2\right)$$