

c) Dio nosača DGE:

$$5. \sum F_z = -Q_D - F_E = 0,$$

$$6. \sum M_E = -Q_D \cdot 2 + M_E + M = 0.$$

Slijedi:

$$F_E = -Q_D, F_E = -20 \text{ kN}, M_E = Q_D \cdot 2 - M, M_E = 22 \text{ kN} \cdot \text{m}.$$

Momenti savijanja su u karakterističnim presjecima:

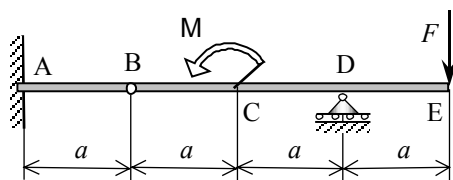
$$M_A = M_B = M_D = 0, M_E = 22 \text{ kN} \cdot \text{m}, M_H = F_A \cdot 3 - \frac{q \cdot 3^2}{2} = 12 \text{ kN} \cdot \text{m},$$

$$M_C = -Q_D \cdot 1 = -20 \text{ kN} \cdot \text{m}, (M_G)_L = Q_D \cdot 1 = 20 \text{ kN} \cdot \text{m}, (M_G)_D = (M_G)_L - M = 2 \text{ kN} \cdot \text{m}.$$

Zadaci

Za ravne Gerberove nosače zadane i opterećene prema slikama treba odrediti reakcije u osloncima, te skicirati i kotirati Q_z - i M_y - dijagrame. Uz sliku nosača naznačene su zadane vrijednosti te rješenja za reakcije u osloncima i vrijednosti momenata savijanja u karakterističnim presjecima nosača.

Zadatak 6.30



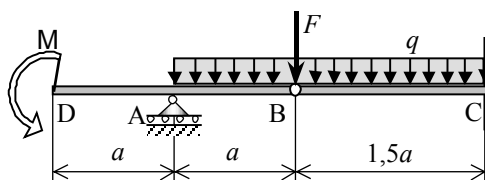
Zadano: $F, a, M = 2Fa$.

Rješenja:

$$F_A = \frac{F}{2}, F_B = \frac{F}{2}, Q_B = \frac{F}{2}, M_A = -\frac{1}{2}Fa,$$

$$(M_C)_L = \frac{1}{2}Fa, (M_C)_D = -\frac{3}{2}Fa, M_D = -Fa.$$

Zadatak 6.31



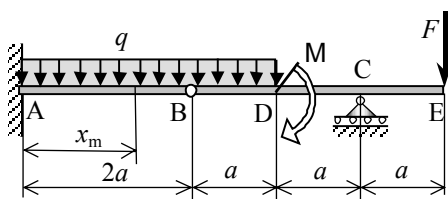
Zadano: $q, a, F = qa, M = \frac{1}{2}qa^2$.

Rješenje:

$$F_A = qa, F_C = \frac{5}{2}qa, M_C = -\frac{21}{8}qa^2,$$

$$M_A = M_D = -M = -\frac{1}{2}qa^2, M_B = 0.$$

Zadatak 6.32



Zadano: $q, a, F = qa, M = qa^2$.

Rješenje:

$$F_A = 1,75qa, Q_B = 0,25qa, F_C = 2,25qa,$$

$$M_A = -1,5qa^2, M_B = M_E = 0, M_C = -qa^2,$$

$$(M_D)_L = -0,75qa^2, (M_D)_D = 0,25qa^2,$$

$$x_m = 1,75a, M_y(x_m) = \frac{1}{32}qa^2 = 0,03125qa^2.$$