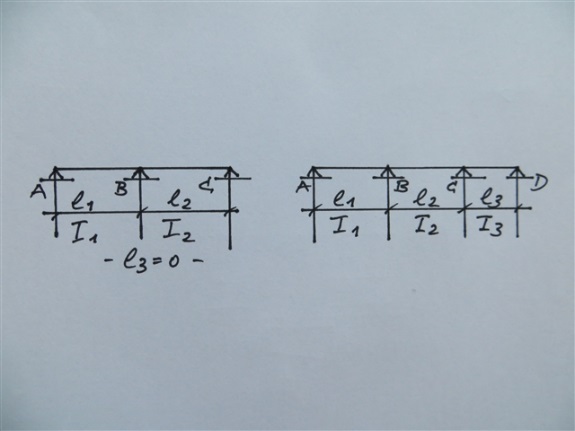
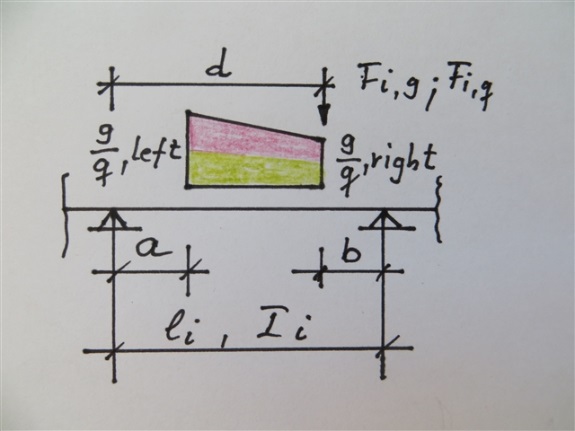
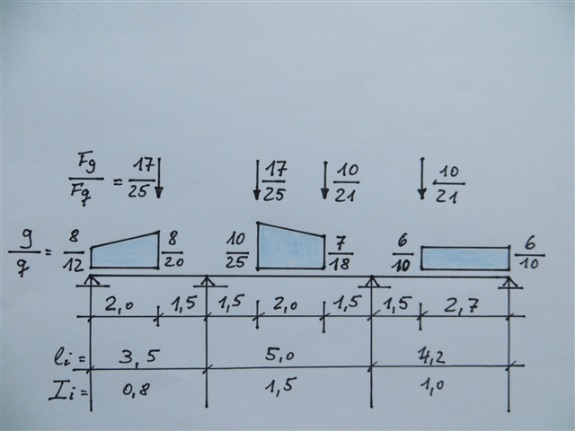
CONTINUOUS BEAM v2.01

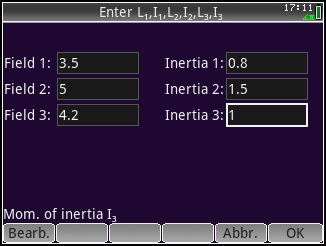
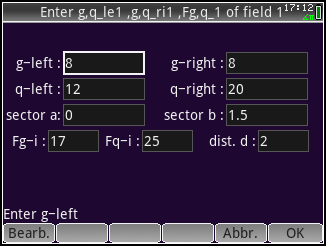
The program computes the support moments **Mb** and **Mc** of a continuous beam consisting of three fields or **Mb** for atwo-field beam, if L3 is input as ***0***. The fields may have different moments of inertia, which must be constant within the length of a span. Support **A** and **C / D** are assumed to have joints in a **two** / **three**-field beam (Fig. 1) .

 fig. 1)  fig. 2)

The program accepts trapezoidal and point loads, splitted in dead (**g**) and live loads (**q**) (fig. 2), the number of which acting on a span is unlimited. The distributed load is characterized by its left and right ordinates, **g,left** , **g,right** ,**q,left** , **q,right** and the segment lengths **a** and **b.** The distance **d** of any point load **Fi,g , Fi,q** is measured from the left support of the field. To finish the input of field ***i***, the quantities of g,le , q,ri , q,le , q,ri , Fi,g and Fi,q must be entered as ***0.*** As they are defaulted to ***0***, you have only to press the **Enter**-key. The program then skips to the load input of field (***i***+1). The exact input is demonstrated by the following example of fig. 3).

 fig. 3)

Load ContiBeam to the Prime and start the program. The screen for the input of the geometry of the beam opens. Enter the lengths and moments of inertia as indicated in fig. 4). (Two-field beam: omit L**3** and enter L**3** = 0 ). Now the program prompts for the entry of loads of the first field, which is indicated

 fig. 4)  fig. 5)

in the top line of the screen. After you have filled in the arrays (fig. 5), press **Enter.** The calculator now asks for the second load combination in field 1, which is displayed as ***0*** by default. As there are no more loads, press **Enter** to continue the input of data of fields 2 and 3:

FIELD LOAD g,le g,ri q,le q,ri a b Fi,g Fi,q d

2 1 10 7 25 18 1.5 1.5 17 25 1.5

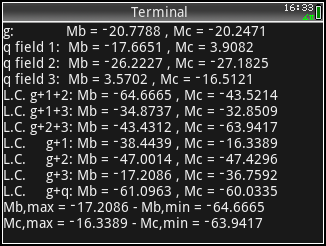
2 2 0 0 0 0 0 0 10 21 3.5

2 3 >> press **Enter**

3 1 6 6 10 10 1.5 0 10 21 1.5

3 2 >> press **Enter**

The result is presented as **Mb**, **Mc** for dead load as well as live loads on every field, several load combinations ( **L.C.**) out of **g**, **q1**, **q2**, **q3**, **g+q on the total beam**, and finally **M,max** and **M,min**.

 fig. 6)

Press **Enter**. The program prompts for the input of new loads. So another load case can be calculated for the same beam. To find the support reactions and field moments, use program

“***Single-Span Girder***” filed in the same HP Prime category. E.g., to find the maximum field moment and support reactions of **FIELD 1** by means of “***Single-Span Girder***” you would have to enter there, when prompted, the moments of the following L.C.s:

Support reaction at **A** and maximum field moment **Mf,1**: Ma = 0 , Mb = -34.8737 ( L.C. g+q1+q3 )

Shear force **Qb,1** at right end of field 1: Ma = 0 , Mb = -64.6665 ( L.C. g+q1+q2 )

…… and for **FIELD 2** to find :

Shear force **Qb,2** at left end of field 2: Mb = -64.6665 , Mc = -43.5214 ( L.C. g+q1+q2 )

( **B,max** = - **Qb,1 + Qb,2**  )

Shear force **Qc,2** at right end of field 2: Mb = -43.4312 , Mc = -63.9417 ( L.C. g+q2+q3 )

Max. field moment **Mf,2** : Mb = -47.0014 , Mc = -47.4296 ( L.C. g+q2 )

etc. ….

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