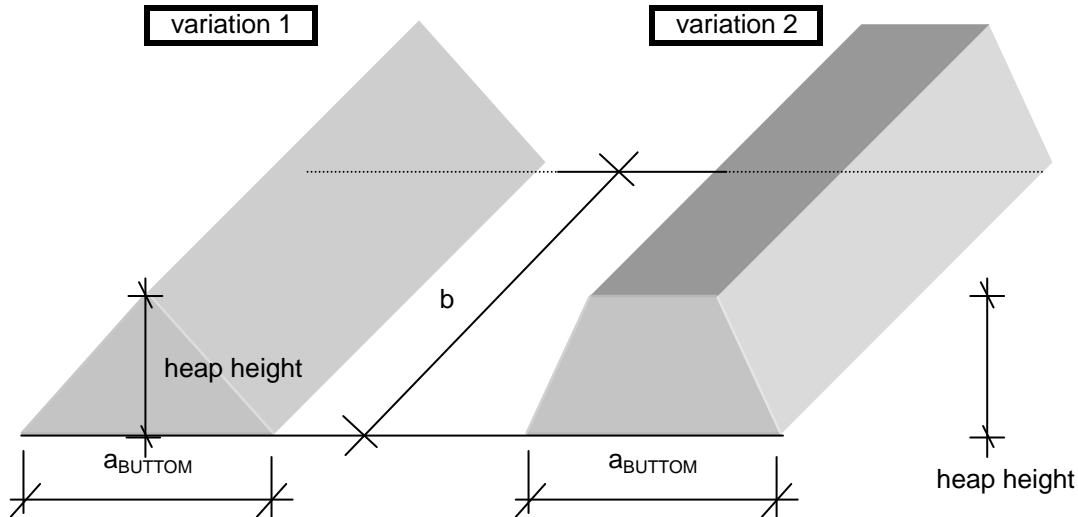


total heap volume

name: _____

date: _____



| heap | ground area | | | | heap height | total heap volume |
|------|---------------------|------------------|-----|-------------------|-------------|-------------------|
| | a_{BOTTOM} | a_{TOP} | b | area | | |
| | [m] | [m] | [m] | [m ²] | [m] | [m ³] |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |

$$\text{area} = a_{\text{BOTTOM}} \cdot b$$

| | |
|---------------|-------------|
| triangle heap | variation 1 |
|---------------|-------------|

$$\text{total heap volume} = \frac{1}{2} \cdot \text{area} \cdot \text{heap height}$$

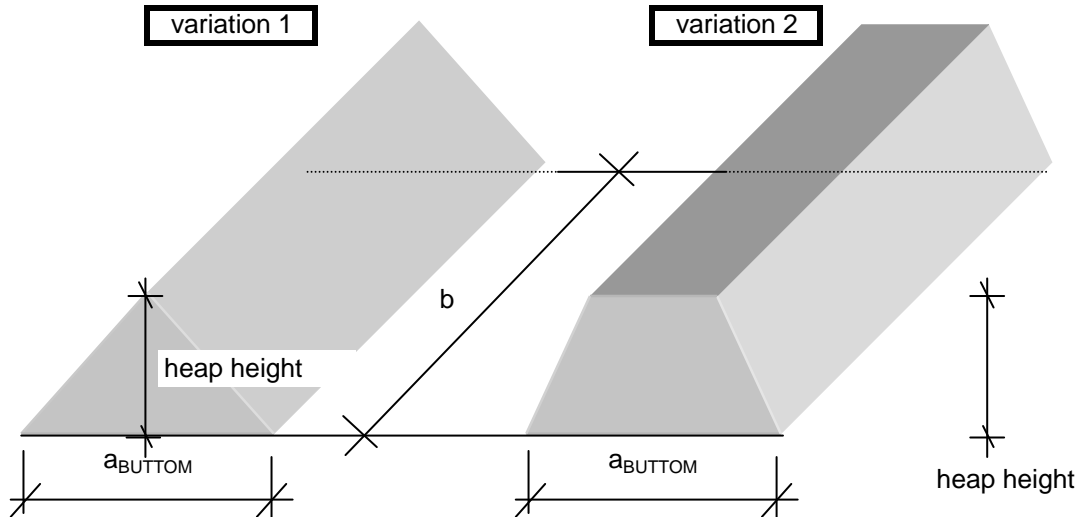
| | |
|----------------|-------------|
| trapezoid heap | variation 2 |
|----------------|-------------|


$$\text{total heap volume} = \frac{(a_{\text{BOTTOM}} + a_{\text{TOP}})}{2} \cdot \text{heap height} \cdot b$$

total heap volume

name: _____

date: _____



| heap | ground area | | | | heap | total heap |
|------|---------------------|------------------|------|-------------------|--------|---|
| | a_{BOTTOM} | a_{TOP} | b | area | height | volume |
| | [m] | [m] | [m] | [m ²] | [m] | [m ³] |
| | Step 1 | | | | Step 1 |  |
| 1 | 3,98 | 2,58 | 1,78 | 7,08 | 0,83 | 4,85 |
| 2 | 3,37 | 1,79 | 1,94 | 6,54 | 0,79 | 3,95 |
| 3 | 3,37 | 2,25 | 1,71 | 5,76 | 0,91 | 4,37 |
| 4 | 3,69 | 1,98 | 1,72 | 6,35 | 0,83 | 4,05 |
| 5 | 3,77 | 1,88 | 1,92 | 7,24 | 0,80 | 4,34 |
| 6 | 3,74 | 2,01 | 1,77 | 6,62 | 0,74 | 3,77 |
| 7 | 3,78 | 2,09 | 1,79 | 6,77 | 0,70 | 3,68 |
| 8 | 3,80 | 1,84 | 1,73 | 6,57 | 0,85 | 4,15 |
| 9 | 3,85 | 2,56 | 1,75 | 6,74 | 0,73 | 4,09 |

$$\text{area} = a_{\text{BOTTOM}} \cdot b$$

triangle heap variation 1

$$\text{total heap volume} = \frac{1}{2} \cdot \text{area} \cdot \text{heap height}$$

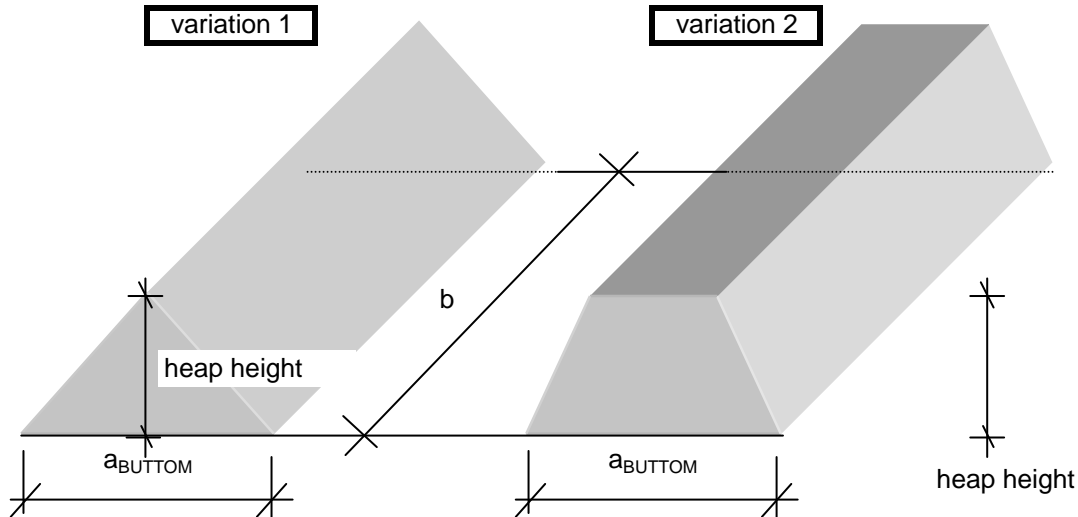
trapezoid heap variation 2


$$\text{total heap volume} = \frac{(a_{\text{BOTTOM}} + a_{\text{TOP}})}{2} \cdot \text{heap height} \cdot b$$

total heap volume

name: _____

date: _____



| heap | ground area | | | | heap | total heap |
|------|---------------------|------------------|------|-------------------|--------|---|
| | a_{BOTTOM} | a_{TOP} | b | area | height | volume |
| | [m] | [m] | [m] | [m ²] | [m] | [m ³] |
| | Step 1 | | | | Step 1 |  |
| 1 | 3,34 | 0 | 1,78 | 5,95 | 0,83 | 2,47 |
| 2 | 3,37 | 0 | 1,94 | 6,54 | 0,79 | 2,58 |
| 3 | 3,37 | 0 | 1,71 | 5,76 | 0,91 | 2,62 |
| 4 | 3,69 | 0 | 1,72 | 6,35 | 0,83 | 2,63 |
| 5 | 3,77 | 0 | 1,92 | 7,24 | 0,80 | 2,90 |
| 6 | 3,74 | 0 | 1,77 | 6,62 | 0,74 | 2,45 |
| 7 | 3,78 | 0 | 1,79 | 6,77 | 0,70 | 2,37 |
| 8 | 3,80 | 0 | 1,73 | 6,57 | 0,85 | 2,79 |
| 9 | 3,85 | 0 | 1,75 | 6,74 | 0,73 | 2,46 |

$$\text{area} = a_{\text{BOTTOM}} \cdot b$$

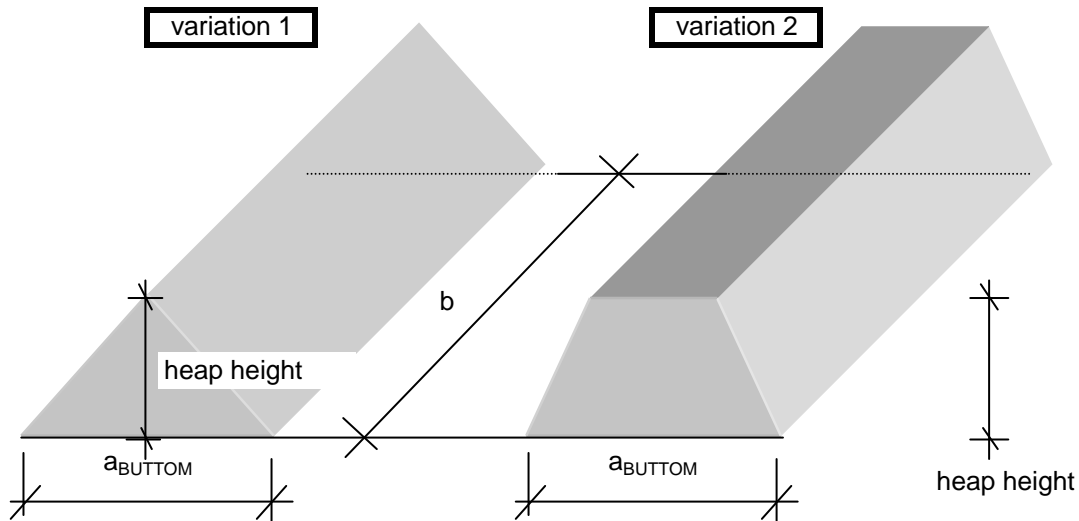
triangle heap variation 1

$$\text{total heap volume} = \frac{1}{2} \cdot \text{area} \cdot \text{heap height}$$

trapezoid heap variation 2

$$\text{total heap volume} = \frac{(a_{\text{BOTTOM}} + a_{\text{TOP}})}{2} \cdot \text{heap height} \cdot b$$

date: _____

[illegible]