



Open Rectangular Basin and Seiches Formulas

Calculators!

Examples!

Conversions!

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List of 8 Open Rectangular Basin and Seiches Formulas

Open Rectangular Basin and Seiches 🗗

1) Length of Basin for Open Rectangular Basin

$$\mathbf{f}_{\mathrm{B}} = \mathrm{T_n} \cdot (1 + (2 \cdot \mathrm{N})) \cdot rac{\sqrt{[\mathrm{g}] \cdot \mathrm{D}}}{4}$$

Open Calculator 🗗

$$\mathbf{ex} = 53.69776 \mathrm{m} = 5.5 \mathrm{s} \cdot (1 + (2 \cdot 1.3)) \cdot \frac{\sqrt{[\mathrm{g}] \cdot 12 \mathrm{m}}}{4}$$

2) Length of Basin given Natural Free Oscillating Period of Basin

$$l_{
m B} = rac{{
m T_n \cdot N \cdot \sqrt{[g] \cdot D}}}{2}$$

Open Calculator 🗗

$$= \frac{38.78171 \text{m}}{2} = \frac{5.5 \text{s} \cdot 1.3 \cdot \sqrt{[\text{g}] \cdot 12 \text{m}}}{2}$$

3) Natural Free Oscillating Period of Basin

$$ag{T_n} = rac{2 \cdot l_B}{N \cdot \sqrt{[g] \cdot D}}$$

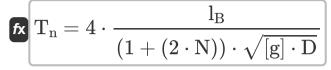
Open Calculator





4) Natural Free Oscillating Period of Basin for Open Rectangular Basin 🗗

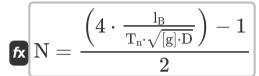




Open Calculator 2

ex
$$3.972251s = 4 \cdot \frac{38.782m}{(1 + (2 \cdot 1.3)) \cdot \sqrt{[g] \cdot 12m}}$$

5) Number of Nodes along Axis of Basin for Open Rectangular Basin 🗗



Open Calculator 2

$$oxed{ex} 0.80001 = rac{\left(4 \cdot rac{38.782 \mathrm{m}}{5.5 \mathrm{s} \cdot \sqrt{[\mathrm{g}] \cdot 12 \mathrm{m}}}
ight) - 1}{2}$$

6) Number of Nodes along Axis of Basin given Natural Free Oscillating Period of Basin

$$N = rac{2 \cdot l_B}{T_n \cdot \sqrt{[g] \cdot D}}$$

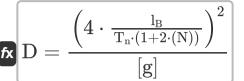
Open Calculator

ex
$$1.30001 = \frac{2 \cdot 38.782 \text{m}}{5.5 \text{s} \cdot \sqrt{[\text{g}] \cdot 12 \text{m}}}$$





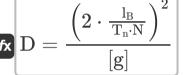
7) Water Depth for Open Rectangular Basin 🗗



Open Calculator 🖸

$$egin{aligned} \mathbf{ex} \ 6.259351 \mathrm{m} = rac{\left(4 \cdot rac{38.782 \mathrm{m}}{5.5 \mathrm{s} \cdot (1 + 2 \cdot (1.3))}
ight)^2}{[\mathrm{g}]} \end{aligned}$$

8) Water Depth given Natural Free Oscillating Period of Basin



Open Calculator

ex
$$12.00018 \mathrm{m} = rac{\left(2 \cdot rac{38.782 \mathrm{m}}{5.5 \mathrm{s} \cdot 1.3}
ight)^2}{[\mathrm{g}]}$$



Variables Used

- **D** Water Depth (Meter)
- **I**_B Length of the Basin (Meter)
- N Number of Nodes along the Axis of a Basin
- T_n Natural Free Oscillating Period of a Basin (Second)





Constants, Functions, Measurements used

- Constant: [g], 9.80665
 Gravitational acceleration on Earth
- Function: sqrt, sqrt(Number)

 A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.
- Measurement: Length in Meter (m)
 Length Unit Conversion
- Measurement: Time in Second (s)
 Time Unit Conversion





Check other formula lists

 Open Rectangular Basin and Seiches Formulas

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