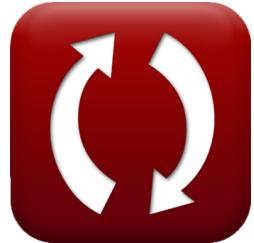




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# Basic Definitions Formulas

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# List of 9 Basic Definitions Formulas

## Basic Definitions ↗

## Specific Retention ↗

### 1) Specific Retention given Porosity ↗

**fx**  $\%S_r = \eta_v - \%S_y$

**Open Calculator ↗**

**ex**  $10 = 25 - 15$

### 2) Specific Retention given Total Volume ↗

**fx**  $\%S_r = \left( \frac{W_r}{V} \right) \cdot 100$

**Open Calculator ↗**

**ex**  $10 = \left( \frac{2m^3}{20m^3} \right) \cdot 100$

### 3) Specific Yield given Porosity ↗

**fx**  $\%S_y = \eta_v - \%S_r$

**Open Calculator ↗**

**ex**  $15 = 25 - 10.0$



## 4) Specific Yield given Total Volume ↗

**fx**  $\%S_y = \left( \frac{W_y}{V} \right) \cdot 100$

[Open Calculator ↗](#)

**ex**  $50 = \left( \frac{10m^3}{20m^3} \right) \cdot 100$

## 5) Total Volume given Specific Retention ↗

**fx**  $V = \left( \frac{W_r}{\%S_r} \right) \cdot 100$

[Open Calculator ↗](#)

**ex**  $20m^3 = \left( \frac{2m^3}{10.0} \right) \cdot 100$

## 6) Total Volume given Specific Yield ↗

**fx**  $V = \left( \frac{W_y}{\%S_y} \right) \cdot 100$

[Open Calculator ↗](#)

**ex**  $66.66667m^3 = \left( \frac{10m^3}{15} \right) \cdot 100$

## 7) Volume of Water Drained by Gravity given Specific Yield ↗

**fx**  $W_y = \frac{\%S_y \cdot V}{100}$

[Open Calculator ↗](#)

**ex**  $3m^3 = \frac{15 \cdot 20m^3}{100}$



**8) Volume of Water Retained given Specific Retention** 

**fx** 
$$W_r = \frac{V \cdot \%S_r}{100}$$

**Open Calculator** 

**ex** 
$$2m^3 = \frac{20m^3 \cdot 10.0}{100}$$

**9) Volume Percent of Porosity Specific Yield and Specific Retention** 

**fx** 
$$\eta_v = \%S_y + \%S_r$$

**Open Calculator** 

**ex** 
$$25 = 15 + 10.0$$



## Variables Used

- $\%S_r$  Specific Retention Percentage
- $\%S_y$  Specific Yield Percentage
- $V$  Total Volume (*Cubic Meter*)
- $W_r$  Volume of Water Retained (*Cubic Meter*)
- $W_y$  Volume of Water Drained by Gravity (*Cubic Meter*)
- $n_v$  Volume Percent of Porosity



# Constants, Functions, Measurements used

- **Measurement:** **Volume** in Cubic Meter ( $m^3$ )

*Volume Unit Conversion* 



## Check other formula lists

- [Basic Definitions Formulas](#) ↗
- [Unsteady Flow Formulas](#) ↗
- [Confined Aquifers Formulas](#) ↗

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