Important SCS Triangular Unit Hydrograph Formulas **PDF**



Formulas Examples with Units

List of 13

Important SCS Triangular Unit Hydrograph **Formulas**

1) Base Length in SCS Triangular Unit Hydrograph Formula 🕝



Example with Units Evaluate Formula (

Evaluate Formula 🕝

Evaluate Formula (

2) Catchment Area given Peak Discharge Formula 🕝



3) Duration of Effective Rainfall for given Time of Peak Formula 🕝





4) Duration of Effective Rainfall given Time of Peak Formula C



Example with Units

Evaluate Formula (

5) Lag Time given Time of Peak Formula 🕝

Example with Units $t_p = T_p - \frac{t_r}{2} \mid 6h = 7h - \frac{2h}{2}$

Evaluate Formula 🕝

6) Peak Discharge Formula C

Evaluate Formula 🕝

Example with Units $Q_p = 2.08 \cdot \frac{A}{T_n}$ $0.8914 \,\mathrm{m}^3/\mathrm{s} = 2.08 \cdot \frac{3.00 \,\mathrm{km}^2}{7 \,\mathrm{h}}$

7) Time of Concentration given Time of Peak Formula C



Formula Example with Units
$$t_c = \frac{T_p - \left(\frac{t_r}{2}\right)}{0.6}$$

$$10_h = \frac{7_h - \left(\frac{2_h}{2}\right)}{0.6}$$

Evaluate Formula (



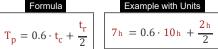


Evaluate Formula (

9) Time of Peak given Peak Discharge Formula 🕝

Formula Example with Units
$$T_p = 2.08 \cdot \frac{A}{Q_p} \qquad 0.0019 \, \text{h} = 2.08 \cdot \frac{3.00 \, \text{km}^2}{0.891 \, \text{m}^3/\text{s}}$$

10) Time of Peak given Time of Concentration Formula



Evaluate Formula (

11) Time of Peak given Time of Recession Formula 🕝

Formula Example with Units
$$T_p = \frac{Tc}{1.67}$$

$$7.1856h = \frac{12h}{1.67}$$

Evaluate Formula (

12) Time of Peak or Time of Rise Formula [7]

Formula
$$T_{p} = \left(\frac{t_{r}}{2}\right) + t_{p}$$

Formula Example with Units
$$T_p = \left(\frac{t_r}{2}\right) + t_p$$

$$7_h = \left(\frac{2_h}{2}\right) + 6_h$$

Evaluate Formula 🕝

13) Time of Recession as Suggested in SCS Formula C

Variables used in list of SCS Triangular Unit Hydrograph Formulas above

- A Area of Catchment (Square Kilometer)
- **Q**_p Peak Discharge (Cubic Meter per Second)
- T_b Base Length (Meter)
- t_c Time of Concentration (Hour)
- t_p Basin Lag (Hour)
- T_p Time of Peak (Hour)
- t_r Standard Duration of Effective Rainfall (Hour)
- Tc Time of Recession (Hour)

Constants, Functions, Measurements used in list of SCS Triangular Unit Hydrograph Formulas above

- Measurement: Length in Meter (m)
 Length Unit Conversion
- Measurement: Time in Hour (h)

 Time Unit Conversion
- Measurement: Area in Square Kilometer (km²)

 Area Unit Conversion
- Measurement: Volumetric Flow Rate in Cubic Meter per Second (m³/s)

 Volumetric Flow Rate Unit Conversion

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