

4.8.1 Equations of Definition



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“...is defined as...”

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$$R \equiv \frac{A}{P_w}$$

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“Hydraulic radius is **defined** as the ratio of cross-sectional area to wetted perimeter.”

4.8.4 Heuristic Equations

- From the American Heritage Dictionary:

Heuristic *adj.* Of or relating to a usually speculative formulation serving as a guide in the investigation or solution of a problem

- From Wikipedia entry for Heuristic:

“Heuristic methods are used to speed up the process of finding a good enough solution, where an exhaustive search is impractical.”

4.8.4 Heuristic Equations

A model for flow from a reservoir:

$$Q = a_R \cdot V^{b_R}$$

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The diagram illustrates the equation $Q = a_R \cdot V^{b_R}$ with three labels and arrows pointing to the corresponding variables:

- Outflow** points to Q .
- Volume of Water** points to V .
- Constants** points to a_R and b_R .

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A model for flow from a reservoir:

$$Q = a_R \cdot V^{\cancel{b_R}}$$

Assume $b_R = 1$

4.8.4 Heuristic Equations

A model for flow from a reservoir:

$$Q = a_R \cdot V$$

- $1/a_R$ is the average time an element of water will spend in the reservoir (**residence time**)

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A model for flow from a reservoir:

$$Q = a_R \cdot V$$

Not perfect, but captures essential aspects and is mathematically tractable