

P8. (difficulty 4*) A kinetic power of flowing water can be estimated from

$$P = \frac{1}{2A^2} \rho Q^3,$$

where P is a kinetic power (in w), A is an estimate cross-section area (in m^2), ρ is a water density (in kg/m^3), and Q is a flow rate (in m^3/s).

Write a function named `mighty_river` to take in an argument: a dictionary of river information (having a key being a river name and a value being a list of a cross-section area, water density, and a flow rate), calculate the estimated power, and return the result in another dictionary using a river name as a key and calculated power as a value.

Use the P8 template. (`River_Template.py`; note: template is only to encourage intended learning skills and allow smooth auto-grading.)

Example

When invoked by

```
mighties = {'Amazon': [1.2e6, 1100, 210000],
            'Congo': [2e6, 1150, 41200],
            'Yangtze': [800e3, 1200, 30000]}
```

```
river_power = mighty_river(mighties)
print(river_power)
```

it results

```
=====
{'Amazon': 3537187.5, 'Congo': 10053.0884, 'Yangtze': 25312.5}
=====
```

Meow