Advanced Higher Maths
SQA 2025 Paper 2
Question 17

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Maths.scot

The volume, V cm^3, of water in a tank is given by

$$V = \frac{1}{5}h^3, \text{ where } h \text{ cm is the depth of water in the tank.}$$

Water is being piped into the tank at a rate of 6 cm^3/second.

Water is leaking from the bottom of the tank at a rate of $\frac{1}{10}\sqrt{h}$ cm^3/second.

Calculate the rate of change of the depth of water when $h = 400$. **4**

Answer:

$\frac{1}{24000}$ cm/sec