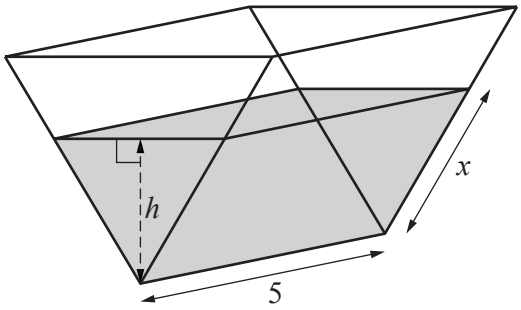
9 In this question all lengths are in metres.



The diagram shows a water container in the shape of a triangular prism. The depth of water in the container is h. The container has length 5. The water in the container forms a prism with a uniform cross-section that is an equilateral triangle of side x.

(a) Show that the volume, V, of the water is given by $V = \frac{5\sqrt{3}h^2}{3}$. [4]

(b) Water is pumped into the container at a rate of $0.5\ \text{m}^3$ per minute. Find the rate at which the depth of the water is increasing when the depth of the water is 0.1 m. [4]

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