

As the triangle is equilateral and its side is 2 meters long then its area is  $S = \frac{1}{2} \cdot 4 \cdot \sin 60^\circ = \sqrt{3} \approx 1.732$

square meters. If the height of the water in the trough is  $h$  then the volume of this water is

$$V = h\sqrt{3} \Rightarrow h = \frac{V}{\sqrt{3}}.$$

So, we have next derivatives:

$$\frac{dh}{dV} = \frac{1}{\sqrt{3}}$$

$$\frac{dV}{dt} = 5$$

$$\frac{dh}{dt} = \frac{dh}{dV} \cdot \frac{dV}{dt} = \frac{1}{\sqrt{3}} \cdot 5 = \frac{5\sqrt{3}}{3} \approx 2.9 \left( \frac{m}{\text{min}} \right).$$

Answer: 2.9 meters per minute (exact value  $\frac{5\sqrt{3}}{3}$  meters per minute).