



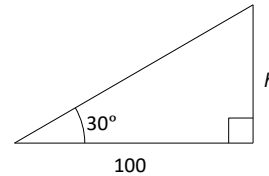
1. $\tan 12^\circ = \frac{\overline{AI}}{10+1,6} \Leftrightarrow \overline{AI} = 11,6 \times \tan 12^\circ \Leftrightarrow \overline{AI} \approx 2,46565 \text{ km} \approx 2466 \text{ m}$

Resposta: A altura do vulcão é, aproximadamente, 2466 m

2. $\tan 30^\circ = \frac{h}{100} \Leftrightarrow h = 100 \tan 30^\circ$

$h \approx 100 \times 0,5774 \approx 57,735$

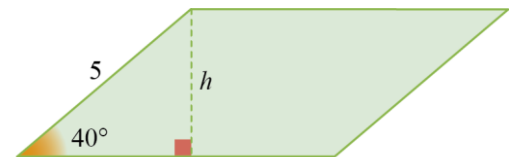
$1,70 + 57,735 \approx 59,435$



Resposta: A altura da torre é, aproximadamente, 59,4 m.

3. $\sin 40^\circ = \frac{h}{5} \Leftrightarrow h = 5 \sin 40^\circ$

$A_{[ABCD]} = 7 \times 5 \sin 40^\circ \approx 22,5 \text{ cm}^2$



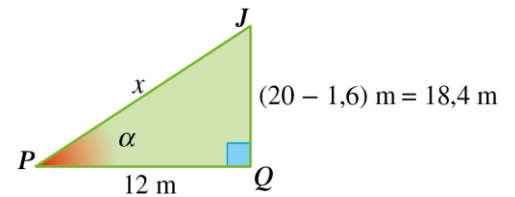
4.1. Seja $x = \overline{PJ}$.

Pelo teorema de Pitágoras:

$x^2 = 18,4^2 + 12^2$

Como $x > 0$, então:

$x = \sqrt{18,4^2 + 12^2} \Leftrightarrow x \approx 21,967$



Resposta: O comprimento da escada é, aproximadamente, 22,0 m.

4.2. Seja $\alpha = \angle PJQ$.

$\tan \alpha = \frac{18,4}{12} \Leftrightarrow \alpha = \tan^{-1} \left(\frac{18,4}{12} \right) \Leftrightarrow \alpha \approx 56,889^\circ$

Resposta: $56,9^\circ$