

ESERCIZI: TEOREMA DI PITAGORA NELLA GEOMETRIA SOLIDA - soluzioni

1. $D = \sqrt{30^2 + 25^2 + 20^2} = \sqrt{1925} \cong 43,9 \text{ (cm)}$

No, il bastone non può entrare nella scatola.

2. $AB = \sqrt{8^2 + 9^2} = \sqrt{145} \cong 12 \text{ (m)}$

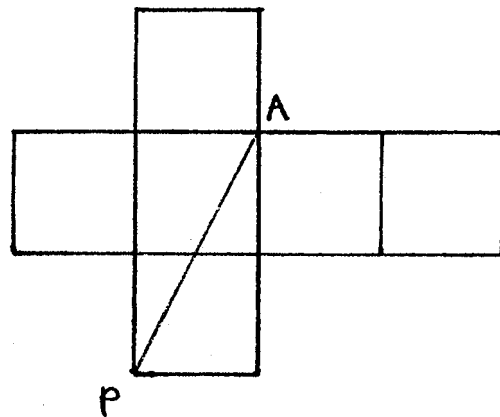
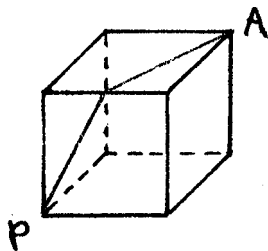
$$BC = \sqrt{8^2 + 13^2} = \sqrt{233} \cong 15,3 \text{ (m)}$$

$$AC = \sqrt{9^2 + 13^2} = \sqrt{250} \cong 15,8 \text{ (m)}$$

$$P_{ABC} = 12 + 15,3 + 15,8 = 43,1 \text{ (m)} \text{ o meglio:}$$

$$P_{ABC} = \sqrt{145} + \sqrt{233} + \sqrt{250} \cong 43,1 \text{ (m)}$$

3. Percorso più breve:

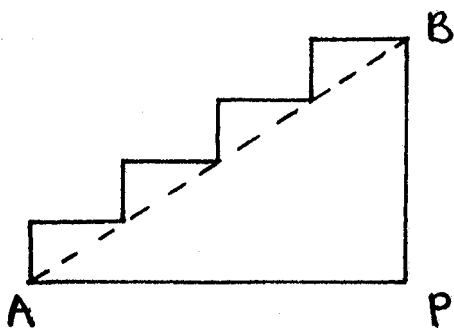


P: partenza

A: arrivo

$$\text{Percorso} = 2 \cdot \sqrt{1^2 + (0,5)^2} = 2 \cdot \sqrt{1,25} \cong 2,236 \text{ (m)}$$

4.



$$BP = 80 \text{ cm}$$

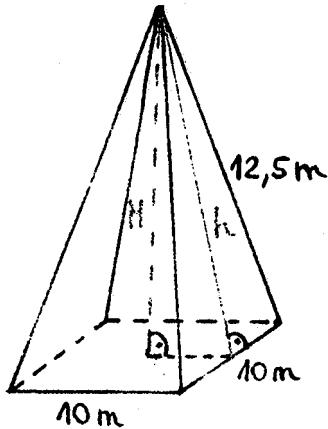
$$AB = 1,70 \text{ m} = 170 \text{ cm}$$

$$AP = \sqrt{170^2 - 80^2} = \sqrt{22500} = 150 \text{ (cm)}$$

$$\text{Profondità gradino} = 150 : 4 = 37,5 \text{ (cm)}$$

$$\text{Altezza gradino} = 80 : 4 = 20 \text{ (cm)}$$

5.



$$\begin{aligned}
 h &= \sqrt{(12,5)^2 - (10:2)^2} = \\
 &= \sqrt{(12,5)^2 - 5^2} = \\
 &= \sqrt{131,25} \approx 11,46 \text{ (m)}
 \end{aligned}$$

$$\begin{aligned}
 H &= \sqrt{h^2 - (10:2)^2} = \\
 &= \sqrt{131,25 - 5^2} = \\
 &= \sqrt{106,25} \approx 10,31 \text{ (m)}
 \end{aligned}$$