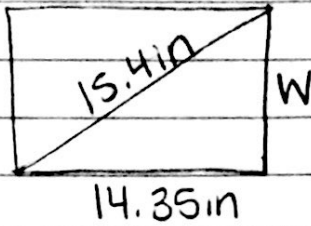


CK12 Radical Apps

①



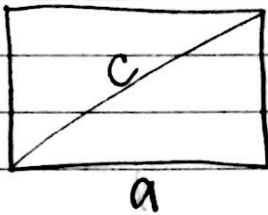
$$14.35^2 + W^2 = 15.4^2$$

$$-14.35^2 \quad -14.35^2$$

$$\sqrt{W^2 = 31.2375}$$

$$W = 5.59 \text{ in.}$$

②



$$A = 114.25 \text{ m}$$

$$a = 114.25 \div 12.78 = 8.94$$

$$(12.78)^2 + (8.94)^2 = c^2$$

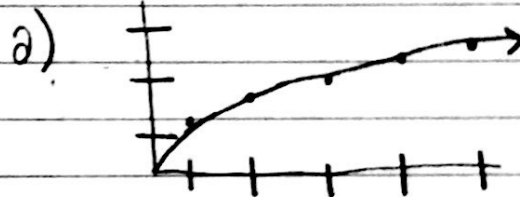
$$15.60 \text{ in.}$$

③

$$T = a\sqrt{L}$$

$$a = \frac{2\pi}{\sqrt{g}} = \frac{2\pi}{\sqrt{32}} = 1.11$$

$$T = 1.11\sqrt{L}$$



b) $10 = 1.11\sqrt{L}$

$$\frac{10}{1.11} = \sqrt{L}$$

$$9 = \sqrt{L}$$

$$81 = L$$

$$81 \text{ ft.}$$

④

$$a = \frac{2\pi}{\sqrt{1.6}} = 4.97$$

$$T = 4.97\sqrt{L}$$

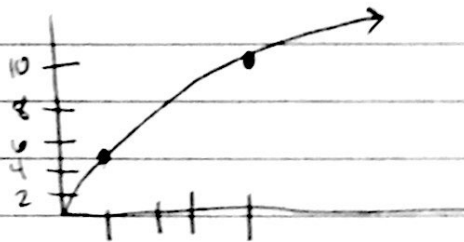
b) $10 = 4.97\sqrt{L}$

$$\frac{10}{4.97} = \sqrt{L}$$

$$2 = \sqrt{L}$$

$$4 \text{ m} = L$$

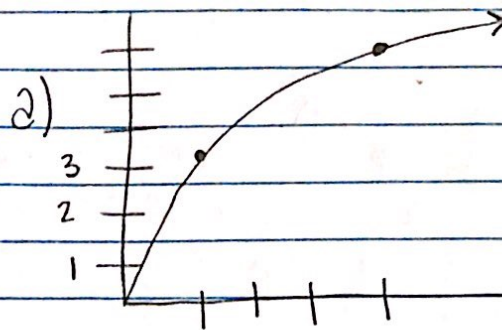
a)



→

$$\textcircled{5} \quad a = \frac{2\pi}{\sqrt{3.69}} = 3.27$$

$$T = 3.27\sqrt{L}$$



$$b) \quad 3 = 3.27\sqrt{L}$$

$$\frac{3}{3.27} = \sqrt{L}$$

$$0.92^2 = L$$

$$\boxed{0.96\text{m} = L}$$

⑥ Helsinki

$$a = \frac{2\pi}{\sqrt{9.89}}$$

$$a = 2.005$$

$$T = 2.005\sqrt{L}$$

L.A.

$$a = \frac{2\pi}{\sqrt{9.796}}$$

$$a = 2.007$$

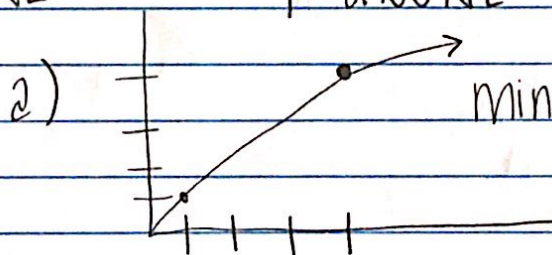
$$T = 2.007\sqrt{L}$$

Mexico City

$$a = \frac{2\pi}{\sqrt{9.779}}$$

$$a = 2.009$$

$$T = 2.009\sqrt{L}$$



minor difference -
hard to see!

b) about 16m (8 ÷ 2 is 4 and $\sqrt{16} = 4$)

$$\textcircled{7} \quad 2.39h = x$$

$$A = 2.39h(h)$$

$$A = 2.39h^2$$

$$h^2 + (2.39h)^2 = d^2$$

$$6.7121h^2 = d^2$$

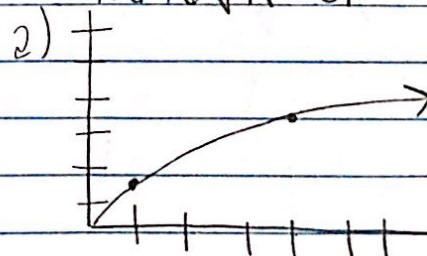
$$2.591h = d$$

$$h = \frac{1}{2.591}d$$

$$A = 2.39\left(\frac{1}{2.591}d\right)^2$$

$$0.356A = d^2$$

$$1.676\sqrt{A} = d$$



$$b) \quad 1.676\sqrt{150} = d$$

$$\boxed{20.527\text{m} = d}$$

$$\textcircled{8} \quad V = \pi r^2 \cdot h$$

$$h = 3r$$

$$452 = \pi r^2 (3r)$$

$$\frac{452}{3\pi} = \frac{3\pi r^3}{3\pi}$$

$$\sqrt[3]{47.959} = \sqrt[3]{r^3}$$

$$\boxed{3.633 \text{ cm} = r}$$

$$\textcircled{9} \quad V = \frac{4}{3} \pi r^3$$

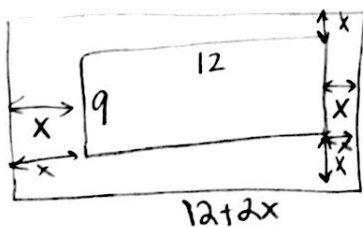
$$\frac{3}{4} \cdot 950 = \frac{4}{3} \pi r^3 \cdot \frac{3}{4}$$

$$\frac{712.5}{\pi} = \frac{4\pi r^3}{\pi}$$

$$\sqrt[3]{226.796} = \sqrt[3]{r^3}$$

$$\boxed{6.098 \text{ cm} = r}$$

$\textcircled{10}$



$$12 \cdot 9 + (9+2x)(12+2x) = 180$$

$$(9+2x)(12+2x) = 72 \quad \text{★ BONUS!}$$

$$108 + 18x + 24x + 4x^2 = 72$$

$$\frac{4x^2}{2} + \frac{42x}{2} + \frac{36}{2} = \frac{0}{2}$$

$$2x^2 + 21x + 18 = 0$$

$$x = \frac{-21 \pm \sqrt{441 - 144}}{4}$$

$$x = \frac{-21 \pm \sqrt{297}}{4}$$

$$\frac{-21 \pm 17.23}{4}$$

$$\frac{36}{21} = ?$$

not possible