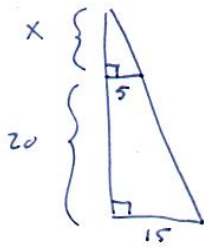


55) s. 47

Tämä on todettava ratkaisussa!

Kolmiot ovat yhdenmuotoiset.



$$\frac{x}{5} = \frac{x+20}{15}$$

$$x \cdot 15 = 5(x+20)$$

$$15x = 5x + 100$$

$$15x - 5x = 100$$

$$10x = 100$$

$$x = \frac{100}{10} = \underline{\underline{10 \text{ cm}}}$$

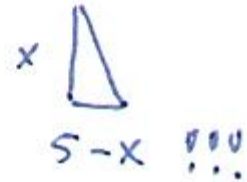
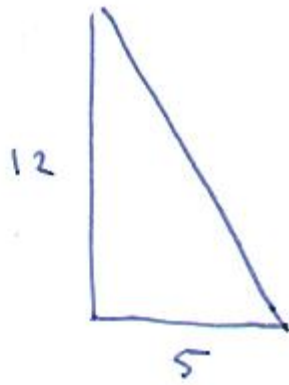
53) c)

$$k = \frac{\text{Uuden kuvion viive}}{\text{Vastinviive alkuperäisessä}}$$

$$k = \frac{5}{3} = \underline{\underline{5:3}}$$

67

S.49



$$\frac{5}{12} = \frac{5-x}{x}$$

$$\text{juste } x = \frac{60}{17}$$

jnc...

Vhdenmuotoisilla kuvioilla s. 51

Pinta-alojen suhde on mittakaava toiseen!

$$\boxed{A_1} \quad a$$

$$\boxed{A_2} \quad b$$

$$\boxed{\frac{A_2}{A_1} = k^2}$$

$$\boxed{\frac{A_2}{A_1} = \left(\frac{b}{a}\right)^2}$$

$$\boxed{\frac{A_1}{A_2} = \left(\frac{a}{b}\right)^2}$$

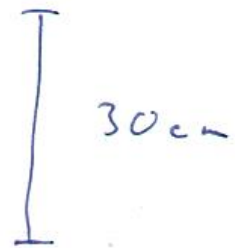
(E)



$$A_1 = 8 \text{ cm}^2$$



$$A_2 = ?$$



$$\frac{A_2}{A_1} = \left(\frac{30}{8}\right)^2 \quad || \cdot A_1$$

$$A_2 = \left(\frac{30}{8}\right)^2 \cdot A_1$$

$$= \left(\frac{30}{8}\right)^2 \cdot 8 \text{ cm}^2$$

$$\approx 112,5 \text{ cm}^2$$

Vhdenmuotoisilla kappaleilla s.53

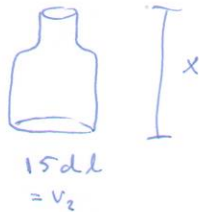
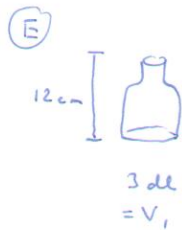
Tilavuusien suhde on mittekkäva kolmanteen!



$$\frac{V_2}{V_1} = k^3$$

$$\frac{V_2}{V_1} = \left(\frac{b}{a}\right)^3$$

$$\frac{V_1}{V_2} = \left(\frac{a}{b}\right)^3$$



$$\frac{V_2}{V_1} = \left(\frac{x}{12}\right)^3$$

$$\frac{15 \text{ dl}}{3 \text{ dl}} = \left(\frac{x}{12}\right)^3$$

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

$$\frac{15}{3} = \frac{x^3}{12^3}$$

$$3x^3 = 15 \cdot 12^3$$

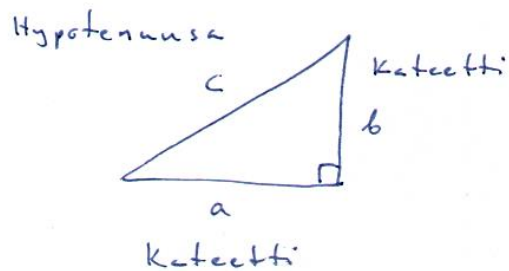
$$x^3 = \frac{15 \cdot 12^3}{3}$$

$$x = \sqrt[3]{\frac{15 \cdot 12^3}{3}} \approx \underline{\underline{20,5 \text{ (cm)}}}$$

Pythagoraan lause s. 60

Hypotenuusa toiseen = Kateetti toiseen + Kateetti toiseen

$$c^2 = a^2 + b^2$$

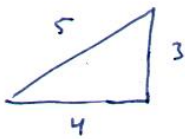


Kolmion on oltava suorakulmainen!

Pisin sivu on "hypotenuusa".

Ituom: Pythagoraan lause toimii myös testinä sille, onko kolmio suorakulmainen vai ei!

(E)



Onko kolmio suorakulmainen?

Pythagoras:

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

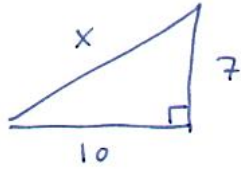
$$25 = 25$$

Tosi

⇒ Kolmio on suorakulmainen.

Laskut

(E)

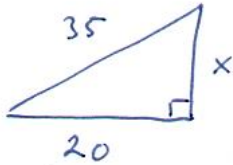


Pythagoras:

$$x^2 = 7^2 + 10^2$$

$$x = (\pm) \sqrt{7^2 + 10^2} \approx 12,2$$

(E)



Pythagoras:

$$35^2 = x^2 + 20^2$$

$$35^2 - 20^2 = x^2$$

$$x^2 = 35^2 - 20^2$$

$$x = (\pm) \sqrt{35^2 - 20^2} \approx 28,7$$

Läksy sivulle 62 asti.