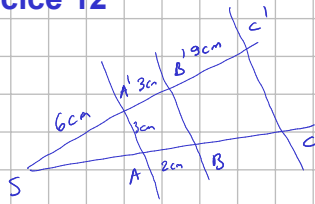


Corrigés détaillés: Géométrie - Théorème de Thalès

Exercice 12



$$\frac{\overline{SA}}{\overline{SA'}} = \frac{\overline{AB}}{\overline{A'B'}} \Rightarrow \overline{SA} = \frac{\overline{AB} \cdot \overline{SA'}}{\overline{A'B'}} = \frac{2 \cdot 6}{3} = 4 \text{ cm}$$

$$\frac{\overline{AB}}{\overline{A'B'}} = \frac{\overline{BC}}{\overline{B'C'}} \Rightarrow \overline{BC} = \frac{\overline{AB} \cdot \overline{B'C'}}{\overline{A'B'}} = \frac{2 \cdot 9}{3} = 6 \text{ cm}$$

Exercice 13



$$\frac{x}{x+10} = \frac{13}{20}$$

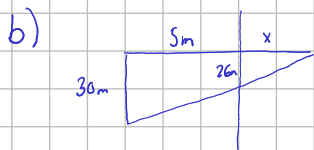
$$20x = 13(x+10)$$

$$20x = 13x + 130$$

$$7x = 130$$

$$x \approx 18,6$$

La largeur de la rivière vaut 18,6m.



$$\frac{x}{x+5} = \frac{26}{30}$$

$$30x = 26(x+5)$$

$$30x = 26x + 130$$

$$4x = 130$$

$$x = 32,5$$

La largeur de la rivière vaut 32,5m.

Exercice 14



$$\overline{OP} = 66 \text{ cm} = 0,66 \text{ m}$$

$$r_{\text{petit pois}} = 3 \text{ mm} = 0,003 \text{ m}$$

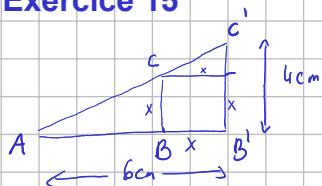
$$r_{\text{lune}} = 1738 \text{ km} = 1,738 \cdot 10^6 \text{ m}$$

$$\frac{\overline{OP}}{\overline{OL}} = \frac{r_{\text{petit pois}}}{r_{\text{lune}}} \Rightarrow \frac{0,66}{0,2} = \frac{0,003}{1,738 \cdot 10^6} \Rightarrow \overline{OL} = \frac{0,66 \cdot 1,738 \cdot 10^6}{0,003} = 3,8236 \cdot 10^8 \text{ m}$$

$$= 3,8236 \cdot 10^5 \text{ km}$$

La distance Terre lune est $\sim 382360 \text{ km}$.

Exercice 15



Thales

$$\frac{\overline{AB}}{\overline{AB'}} = \frac{\overline{AC}}{\overline{AC'}} = \frac{\overline{BC}}{\overline{B'C'}} \Rightarrow \frac{6-x}{6} = \frac{\overline{AC}}{\overline{AC'}} = \frac{x}{4}$$

$$\frac{6-x}{6} = \frac{x}{4} \Rightarrow 4(6-x) = 6x \quad | \quad \text{CL}$$

$$24 - 4x = 6x \quad | \quad + 4x$$

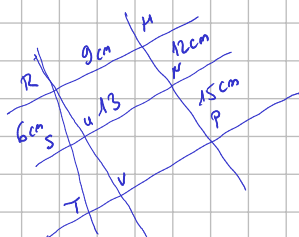
$$24 = 10x \quad | \quad : 10$$

$$x = 2,4$$

$$S = \{2,4\}$$

La longueur x vaut 2,4 cm.

Exercice 16



$$\frac{\overline{RS}}{\overline{ST}} = \frac{\overline{RU}}{\overline{UT}} \Rightarrow \frac{6}{12} = \frac{12}{15} \Rightarrow \overline{ST} = \frac{6 \cdot 15}{12} = 7,5 \text{ cm}$$

$$UV \parallel RS$$

$$\overline{RU} = \overline{UN} = \overline{VP} = 9 \text{ cm}$$

$$\overline{SU} = 13 - 9 = 4 \text{ cm}$$

$$\frac{\overline{RS}}{\overline{RT}} = \frac{\overline{SU}}{\overline{TV}} \Rightarrow \frac{6}{6+7,5} = \frac{4}{\overline{TV}} \Rightarrow \overline{TV} = \frac{4 \cdot 13,5}{6} = 9 \text{ cm}$$

$$\overline{TP} = \overline{TV} + \overline{VP} = 9 + 9 = 18 \text{ cm}$$