

INSA

INSTITUT NATIONAL
DES SCIENCES
APPLIQUÉES
RENNES

STP01-SIND

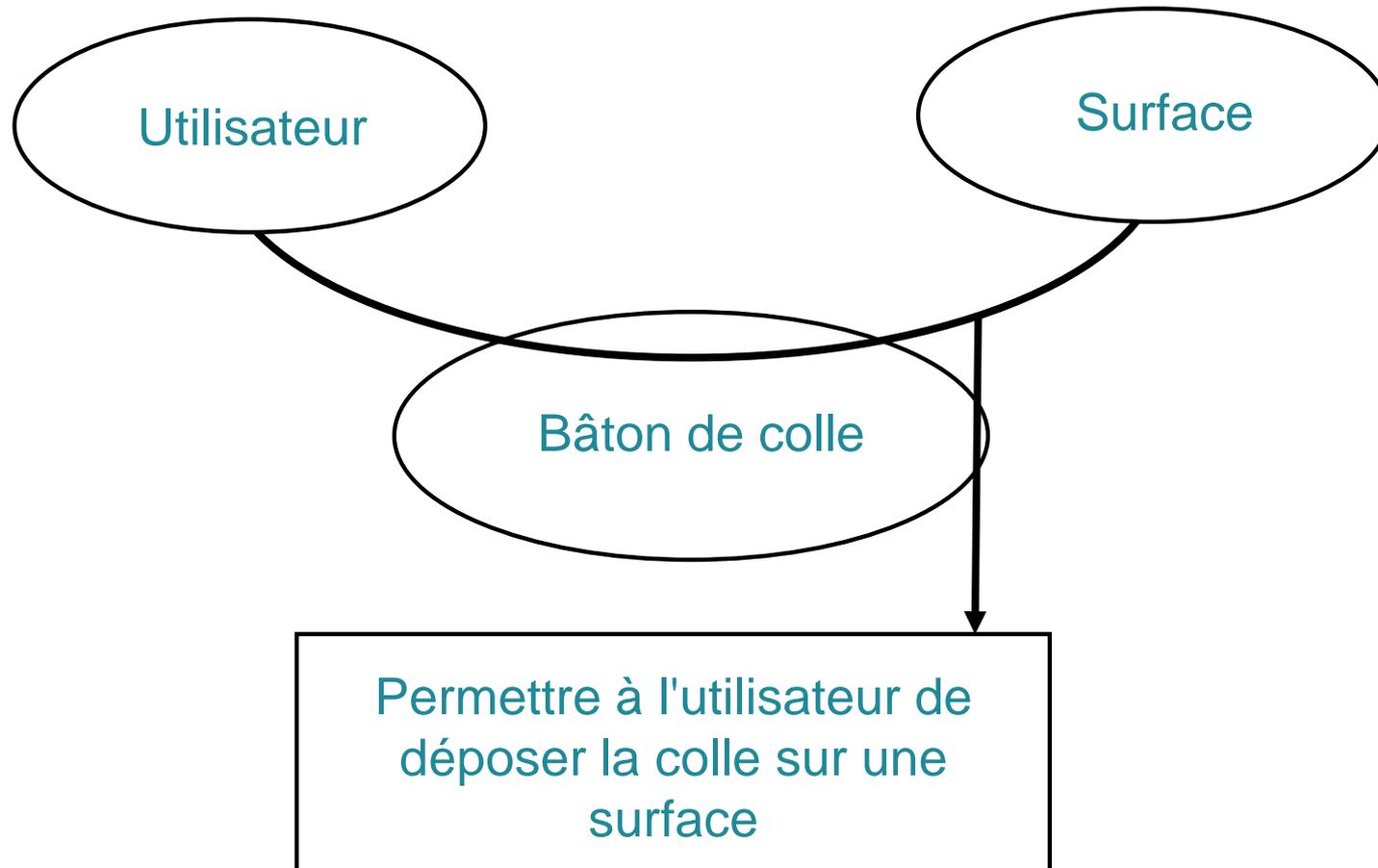
SCIENCES INDUSTRIELLES

TD1 CORRECTION

EXERCICE N°1 : BÂTON DE COLLE



Analyse fonctionnelle



EXERCICE N°1 : BÂTON DE COLLE

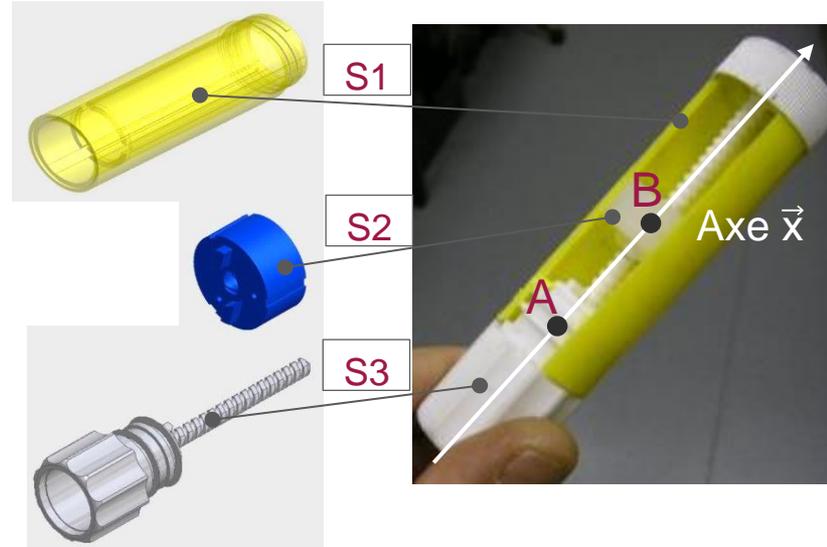
Modélisation cinématique

Liaisons

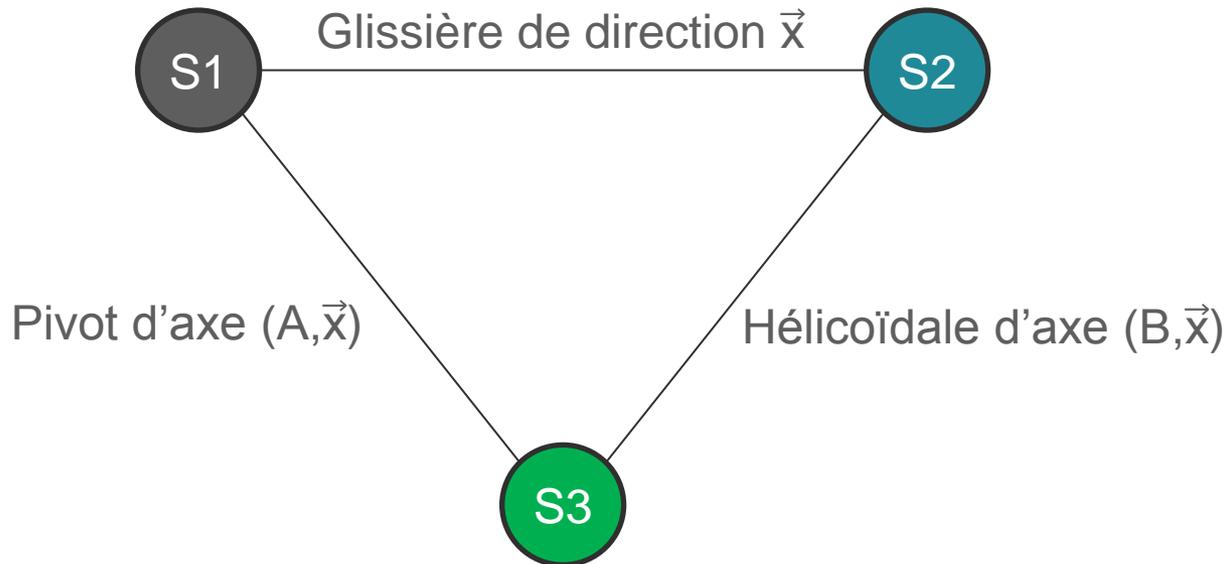
S1 / S3 : liaison pivot d'axe (A, \vec{x})

S2 / S3 : liaison hélicoïdale d'axe (B, \vec{x})

S1 / S2 : liaison glissière de direction \vec{x}



Graphe de liaison



EXERCICE N°1 : BÂTON DE COLLE

Modélisation cinématique

Schéma cinématique plan

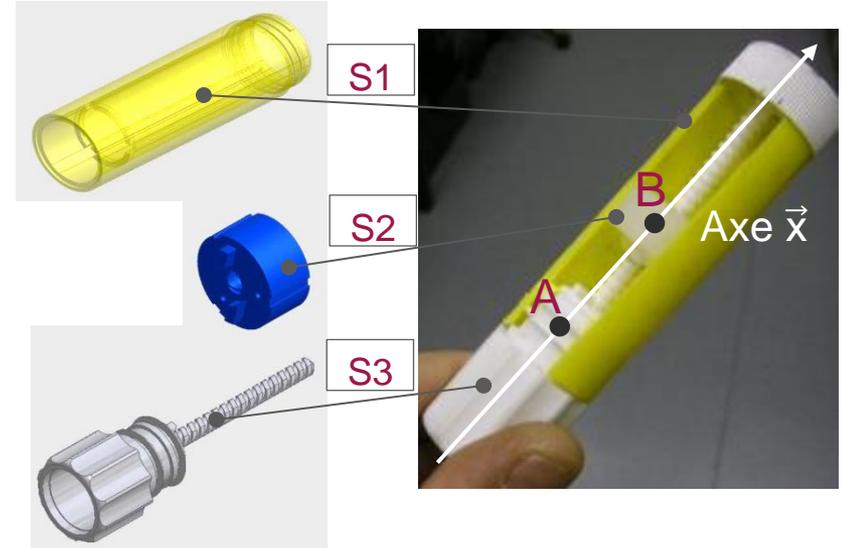
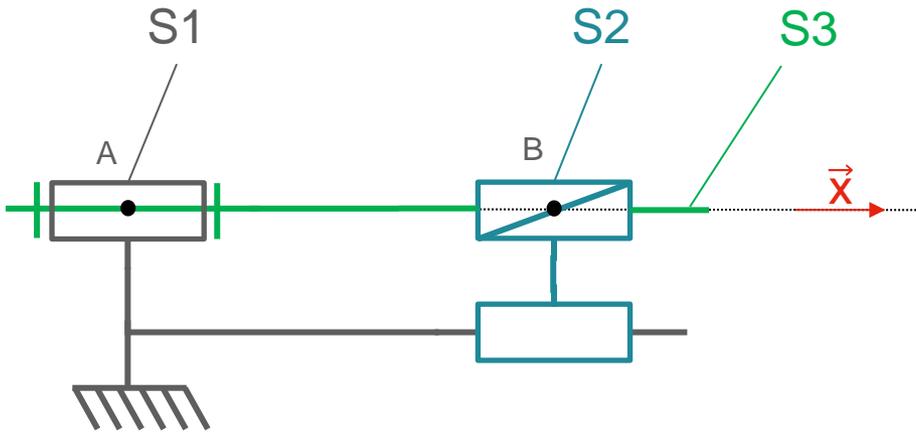
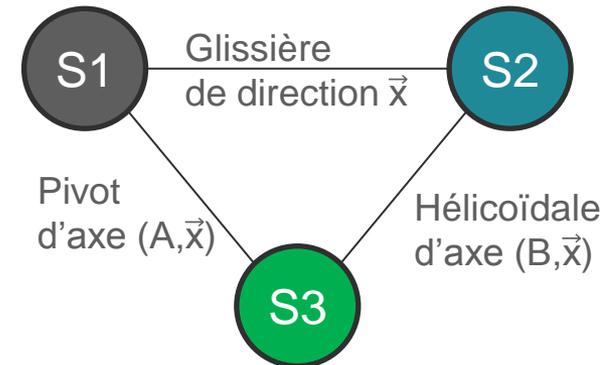
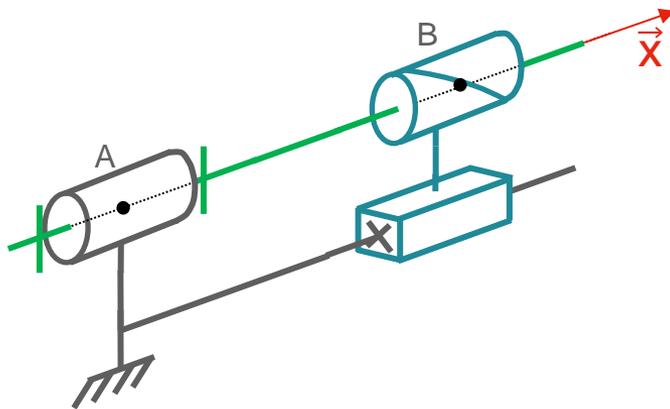
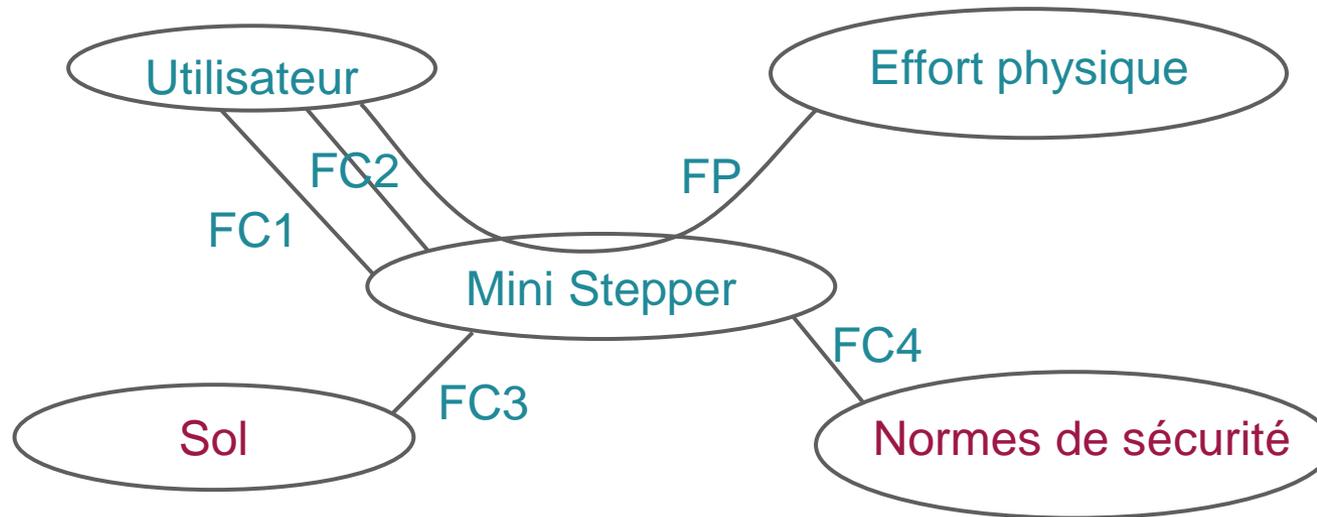


Schéma cinématique spatial



EXERCICE N°2 : MINI STEPPER

Analyse fonctionnelle



FP : permettre à l'utilisateur d'effectuer un effort physique correspondant à la montée d'un escalier tout en restant sur le sol de la maison.

FC1 : s'adapter à l'utilisateur.

FC2 : informer l'utilisateur sur la quantité de travail effectuée.

FC3 : s'adapter au sol.

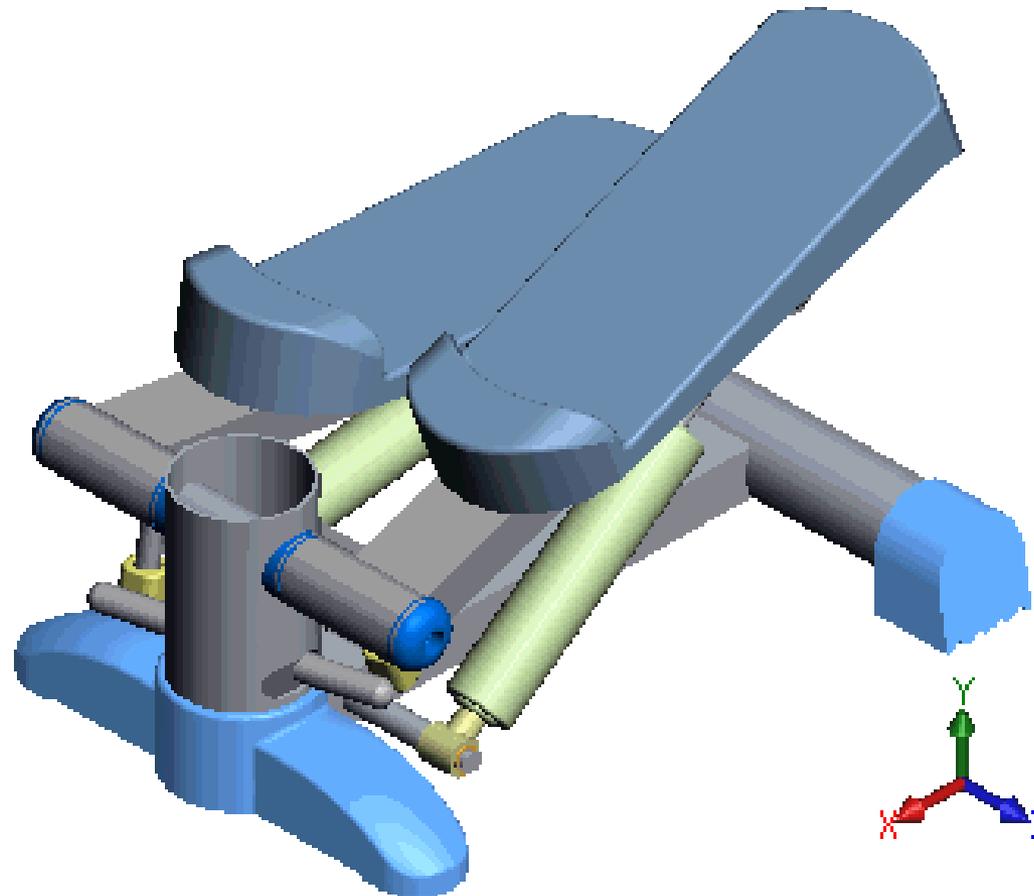
FC4 : respecter les normes de sécurité.

EXERCICE N°2 : MINI STEPPER

Modélisation cinématique

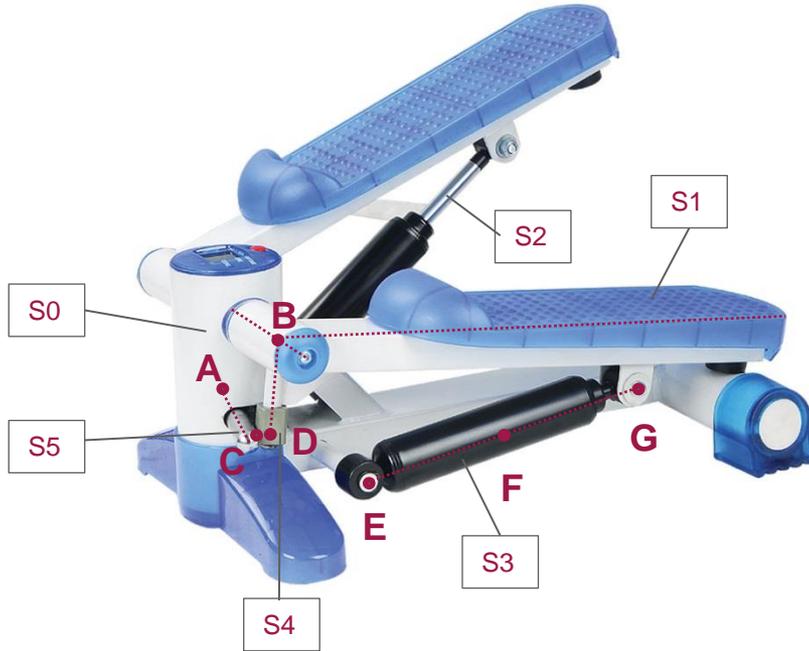
Gilles BERNARD

FEVRIER 2002

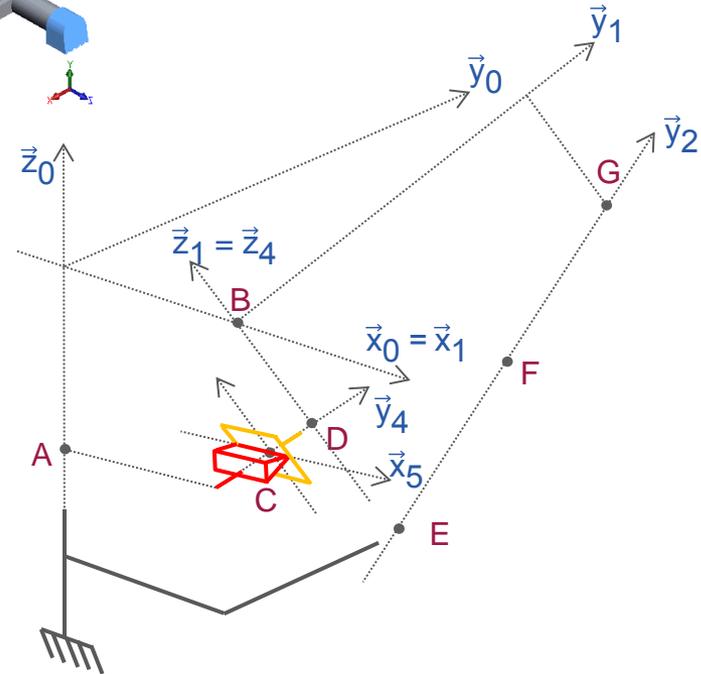
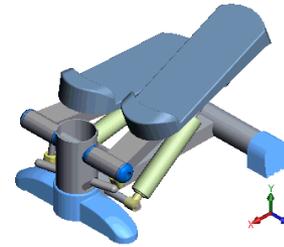


EXERCICE N°2 : MINI STEPPER

Modélisation cinématique



Gilles BERNARD
2008



Liaisons

S4 / S5 : liaison linéaire rectiligne d'axe (C, \vec{x}_5) et de normale \vec{y}_4

S3 / S0 : liaison rotule de centre E

S1 / S2 : liaison rotule de centre G

S1 / S0 : liaison pivot d'axe (B, \vec{x}_0)

S2 / S3 : liaison pivot glissant d'axe (F, \vec{y}_2)

S0 / S5 : liaison pivot d'axe (A, \vec{z}_0)

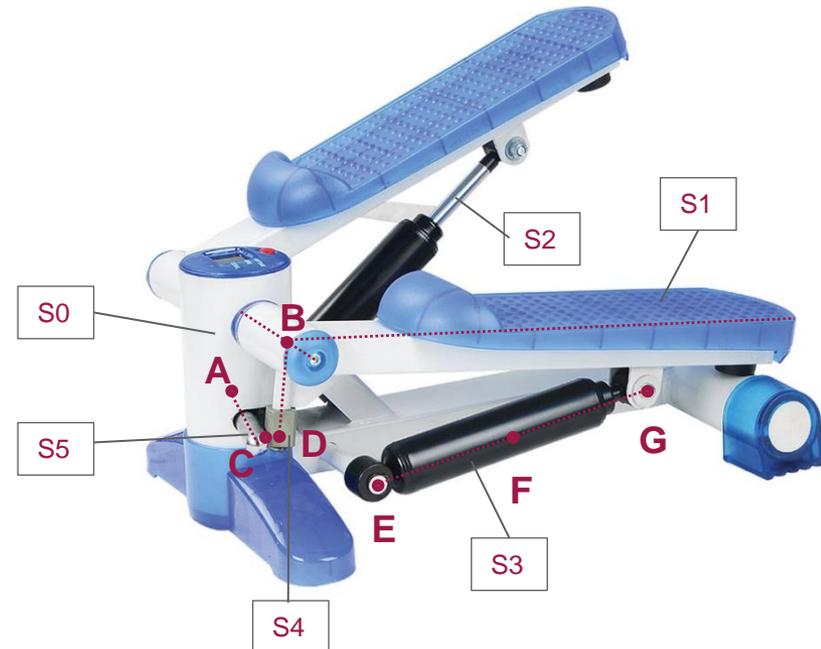
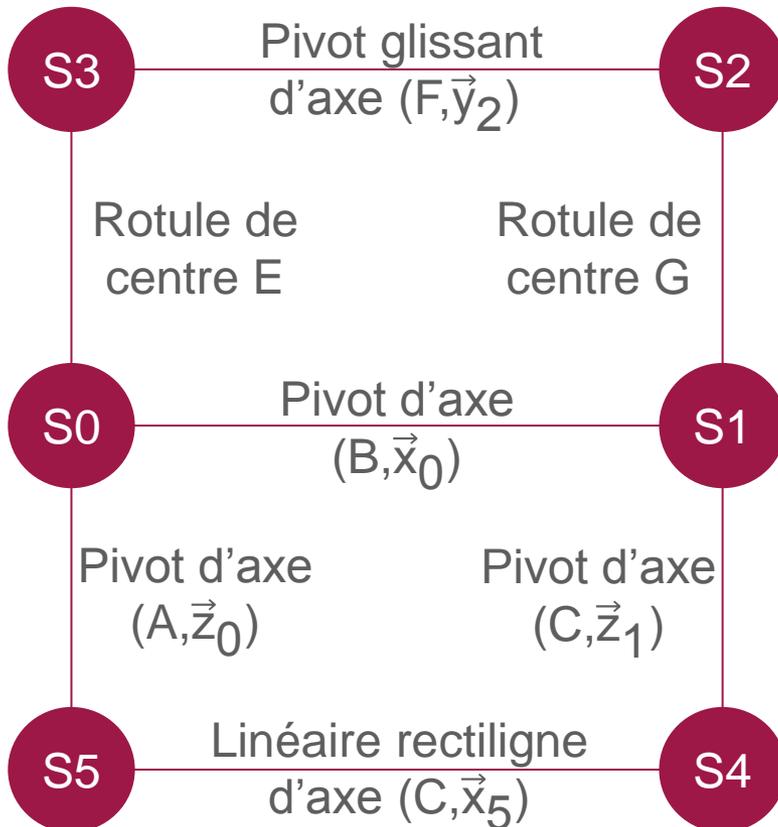
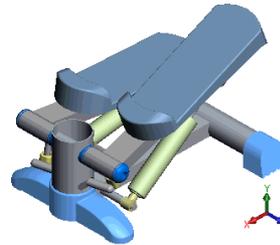
S4 / S1 : liaison pivot d'axe (D, \vec{z}_1)

EXERCICE N°2 : MINI STEPPER

Modélisation cinématique

Graphe de liaison

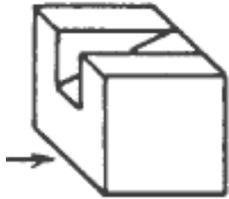
Gilles BERNARD
2008



EXERCICE N°3 : LECTURE DE VUES

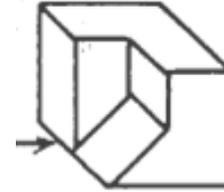
Produit B

Vue de gauche 13



Produit E

Vue de gauche 1



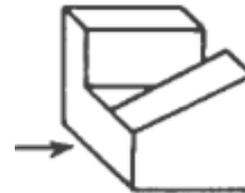
Produit C

Vue de gauche 2



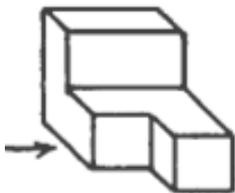
Produit F

Vue de gauche 10



Produit D

Vue de gauche 4



Produit G

Vue de gauche 5



EXERCICE N°3 : LECTURE DE VUES

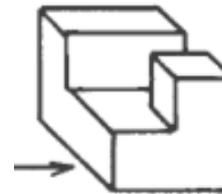
Produit H

Vue de gauche 1



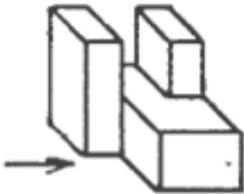
Produit K

Vue de gauche 10



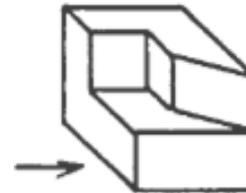
Produit I

Vue de gauche 9



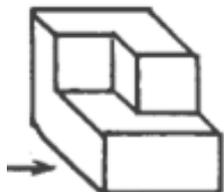
Produit L

Vue de gauche 12

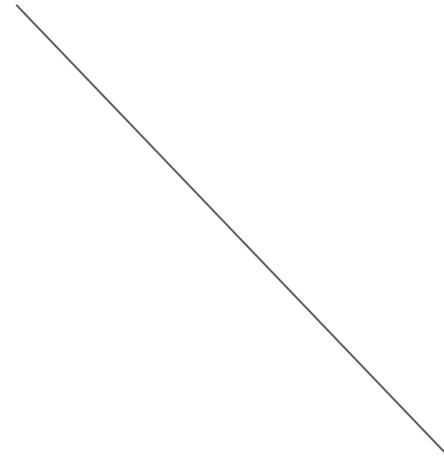
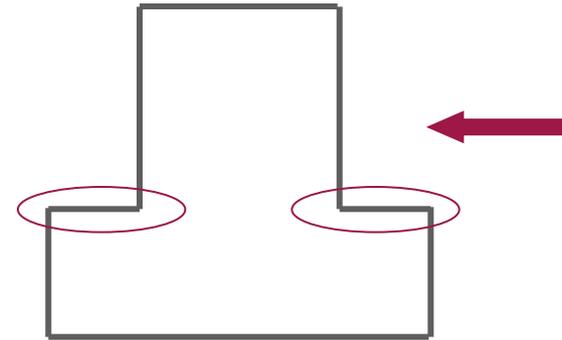
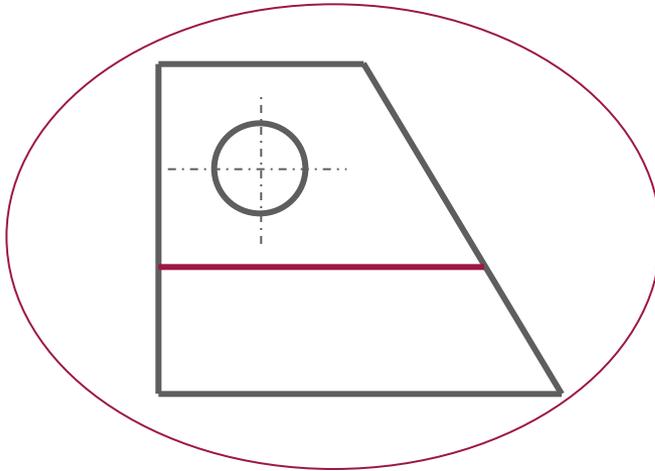


Produit J

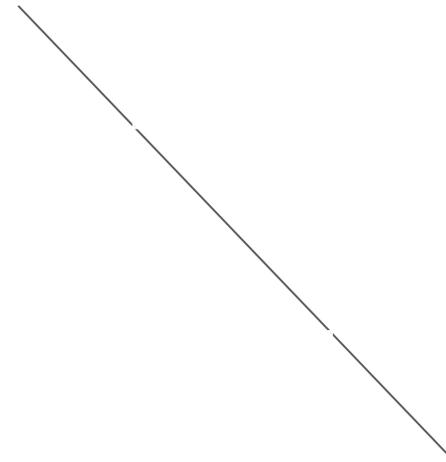
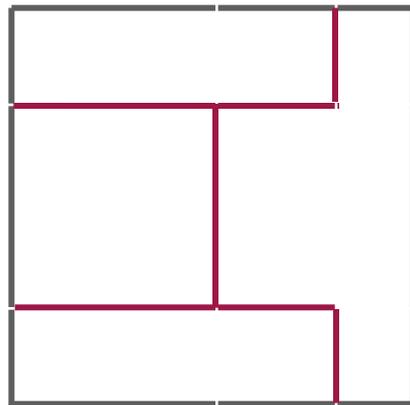
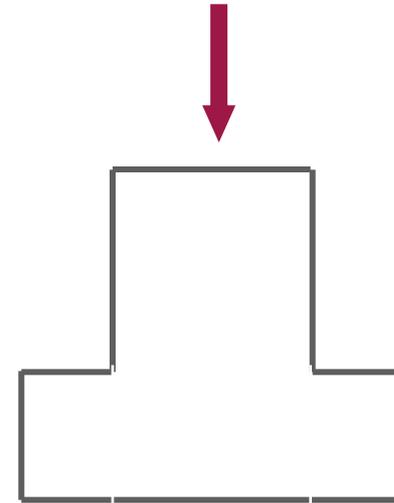
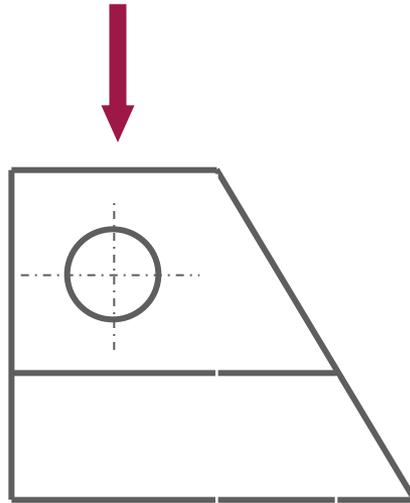
Vue de gauche 7



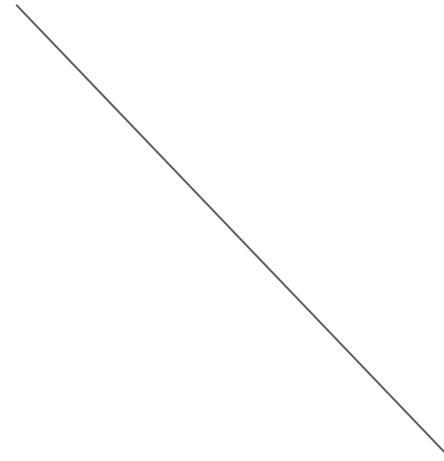
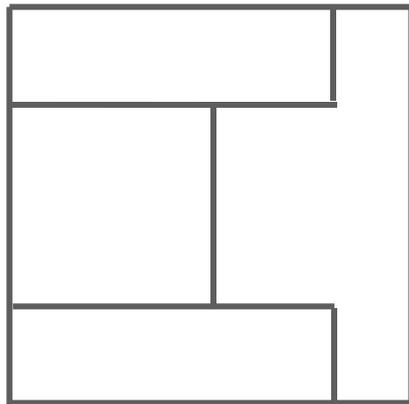
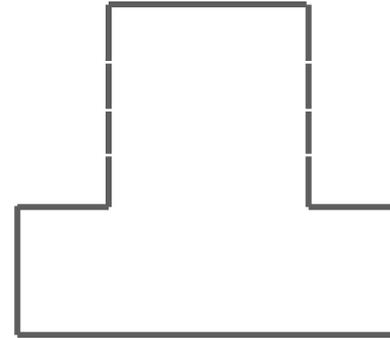
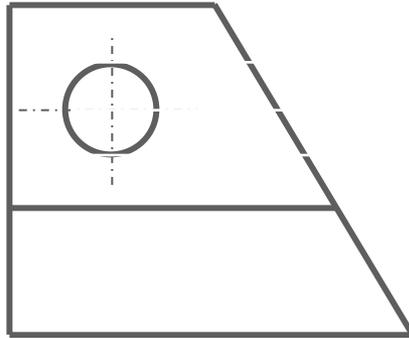
EXERCICE N°3 : LECTURE 3



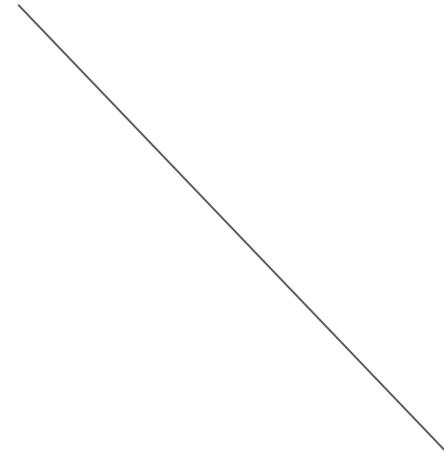
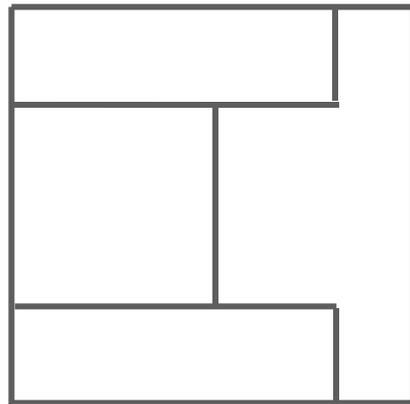
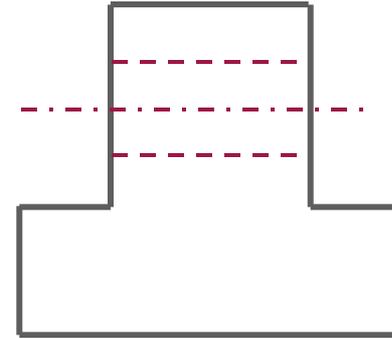
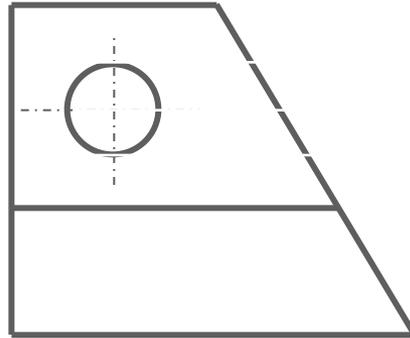
EXERCICE N°3 : LECTURE 3



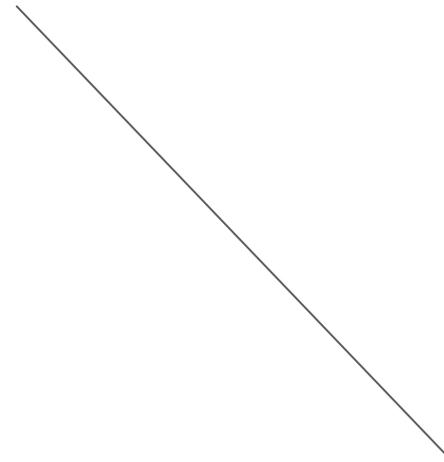
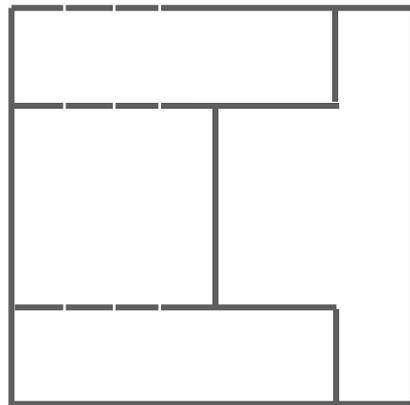
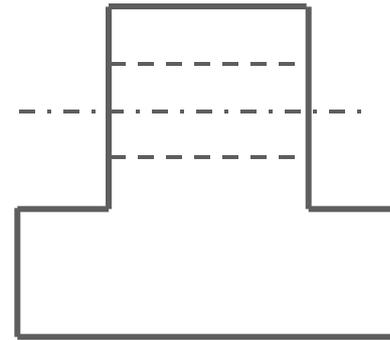
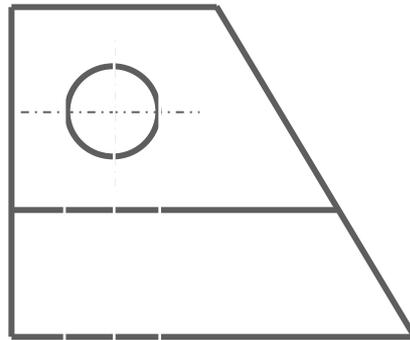
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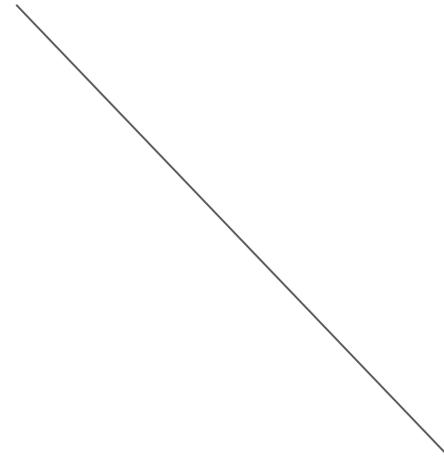
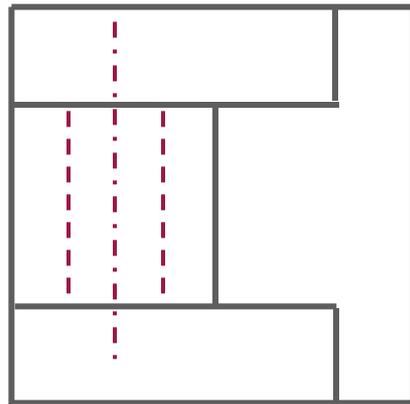
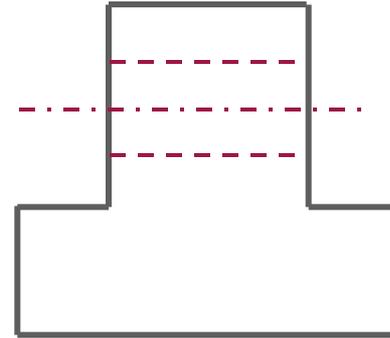
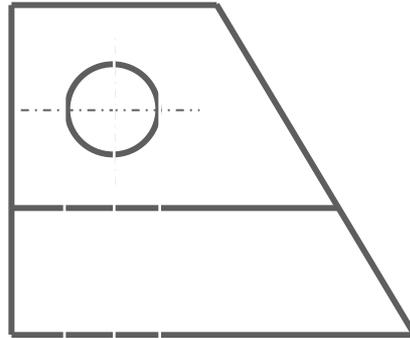
EXERCICE N°3 : LECTURE 3



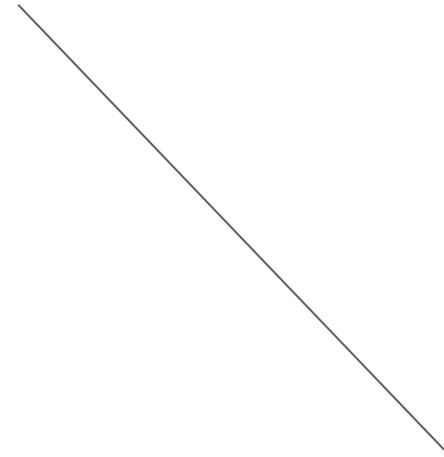
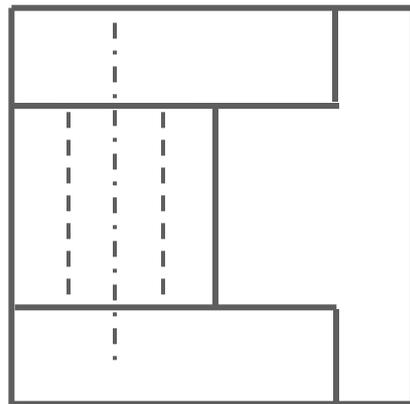
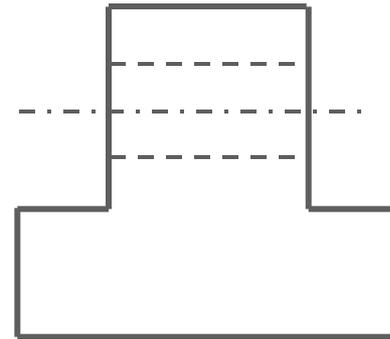
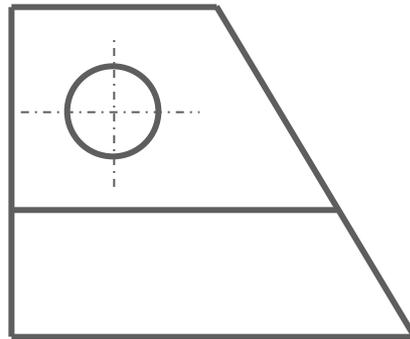
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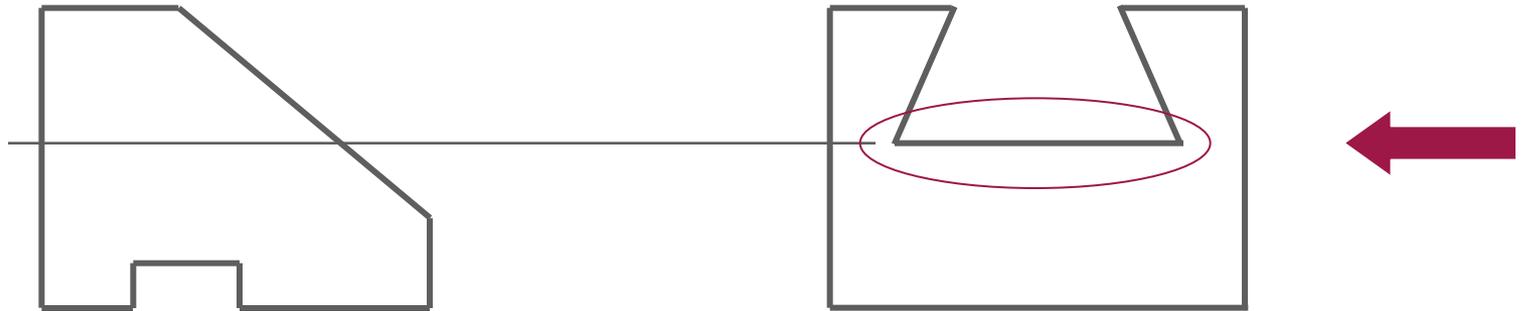
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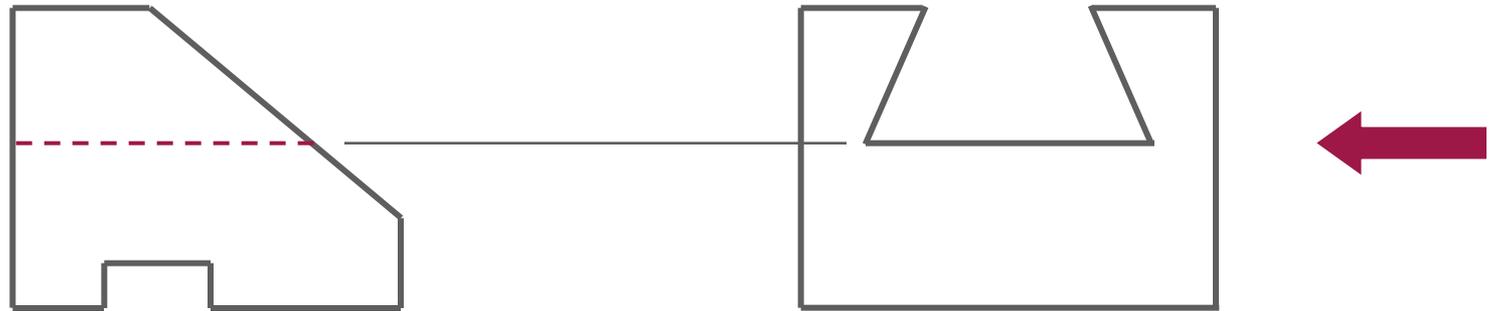
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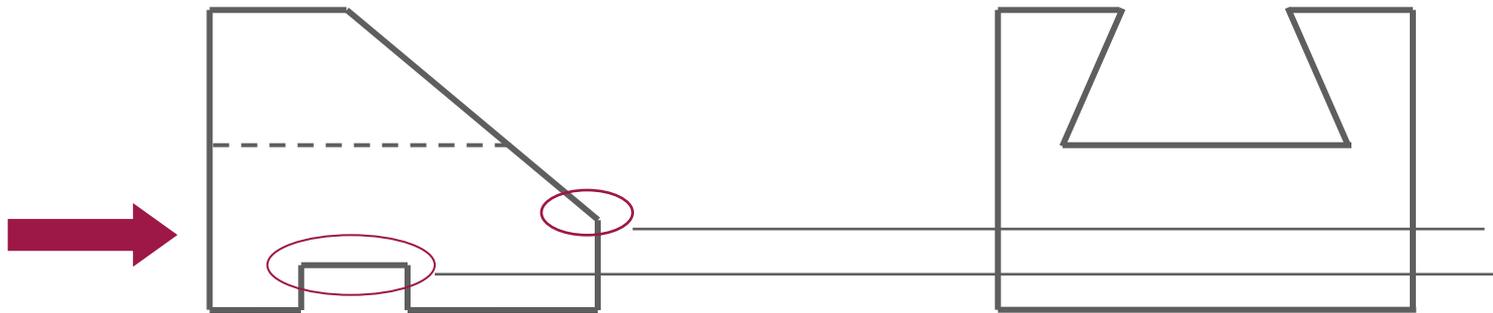
EXERCICE N°3 : LECTURE 4



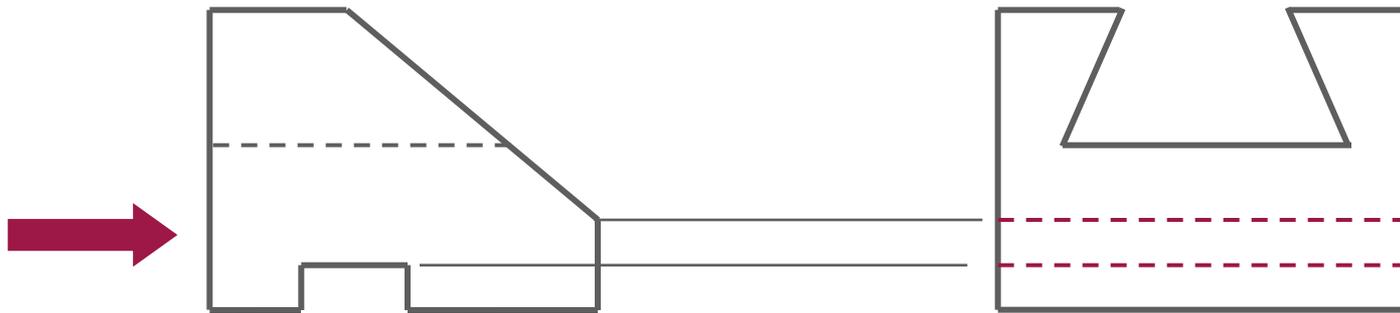
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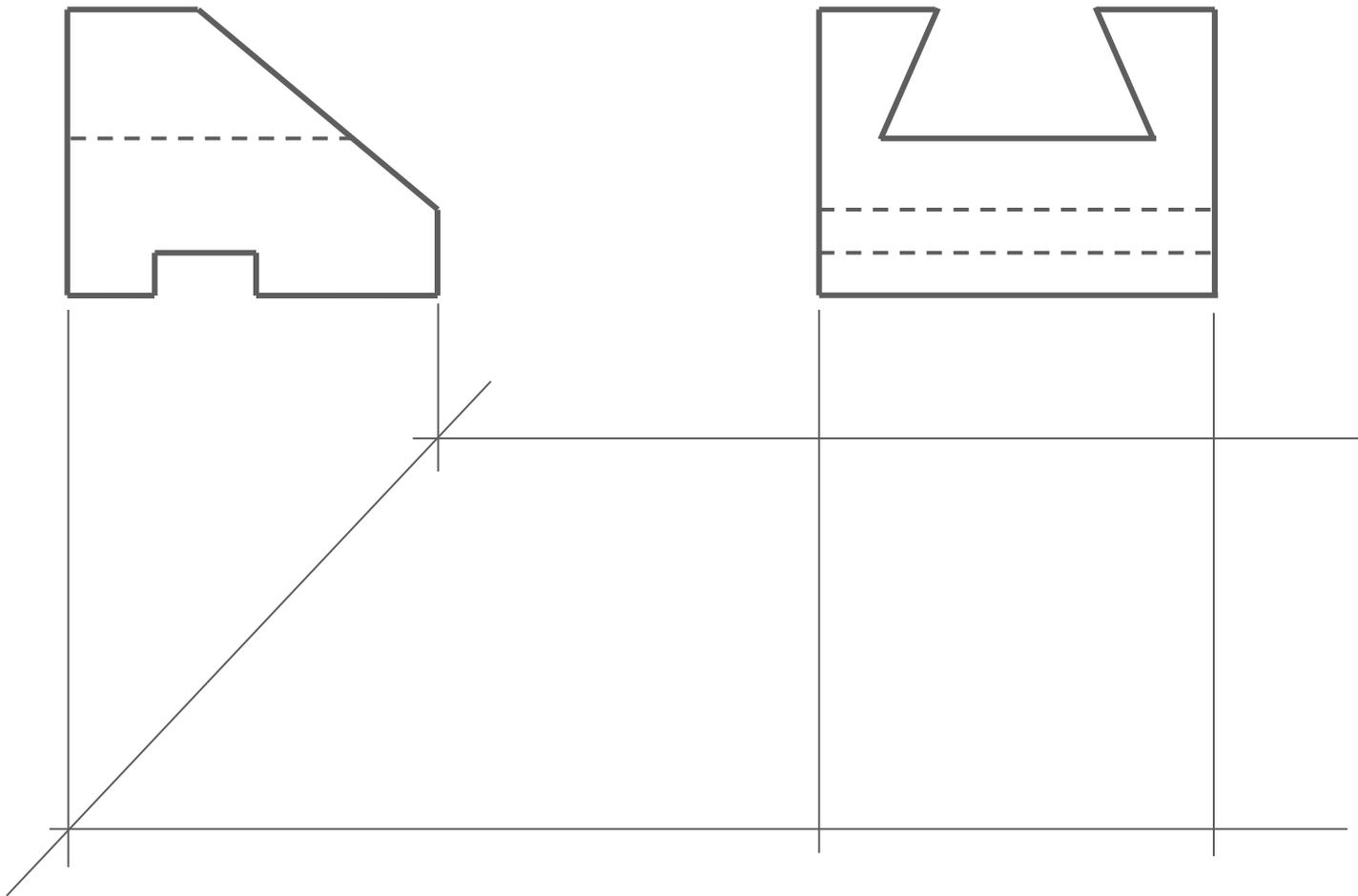
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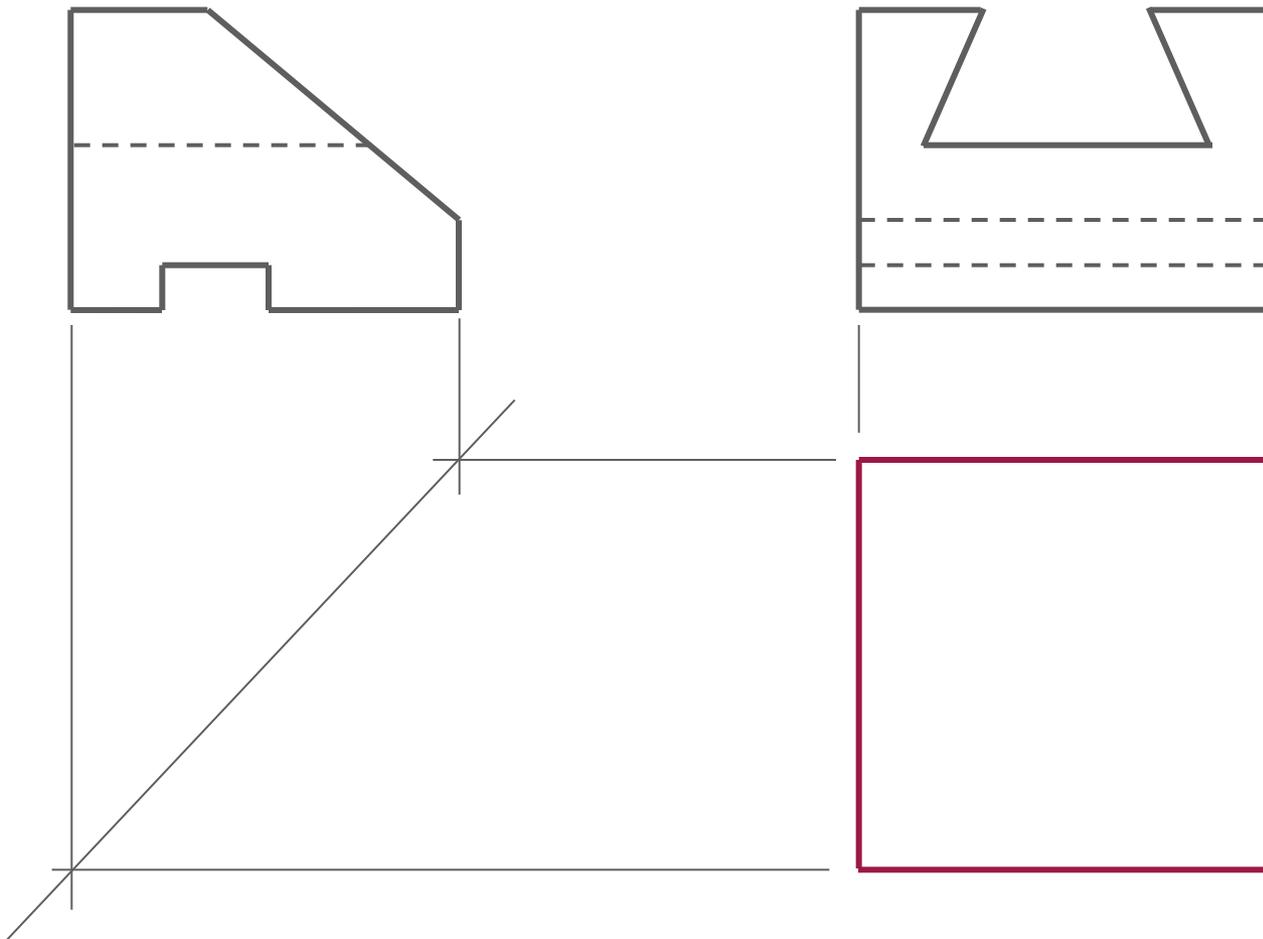
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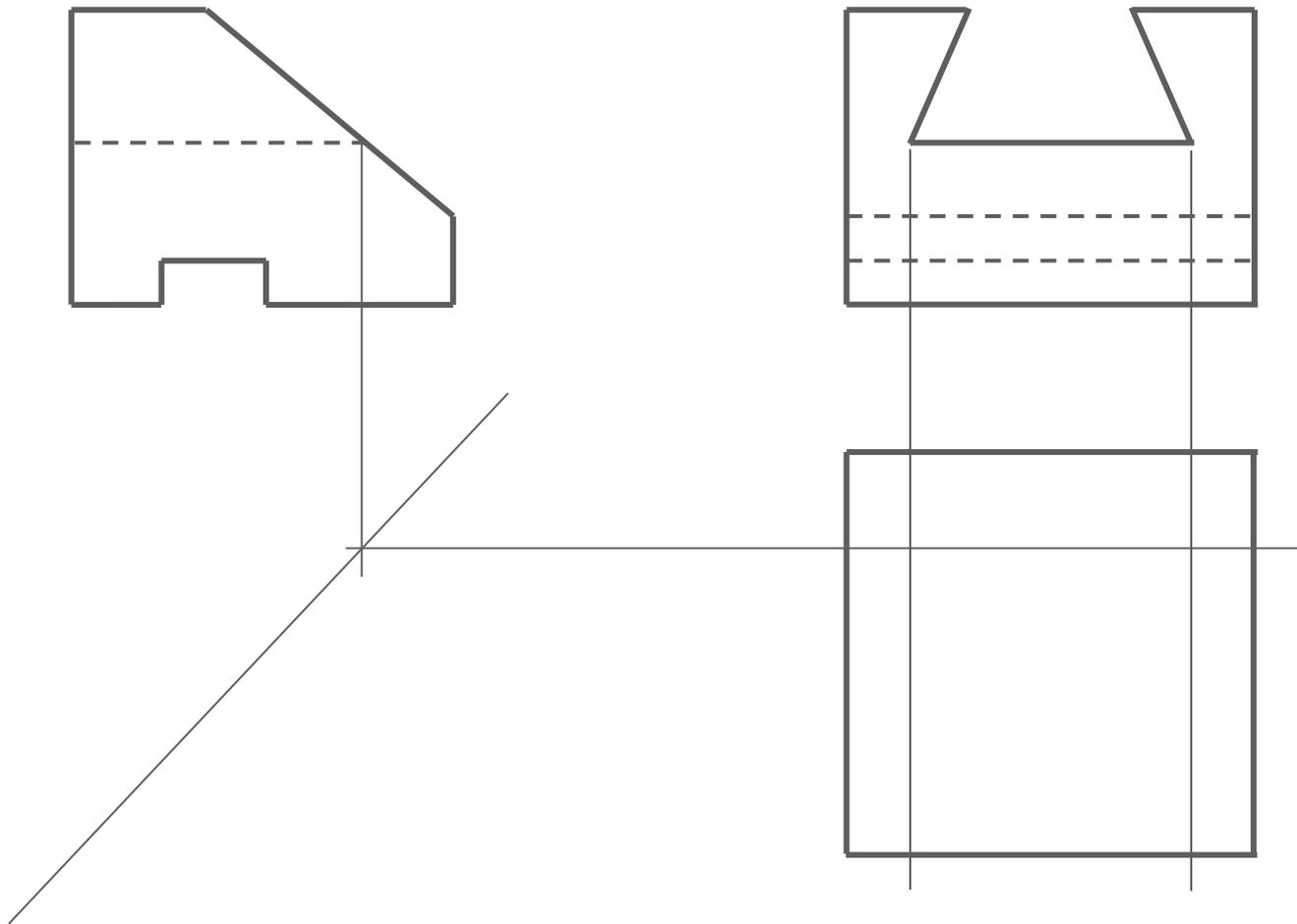
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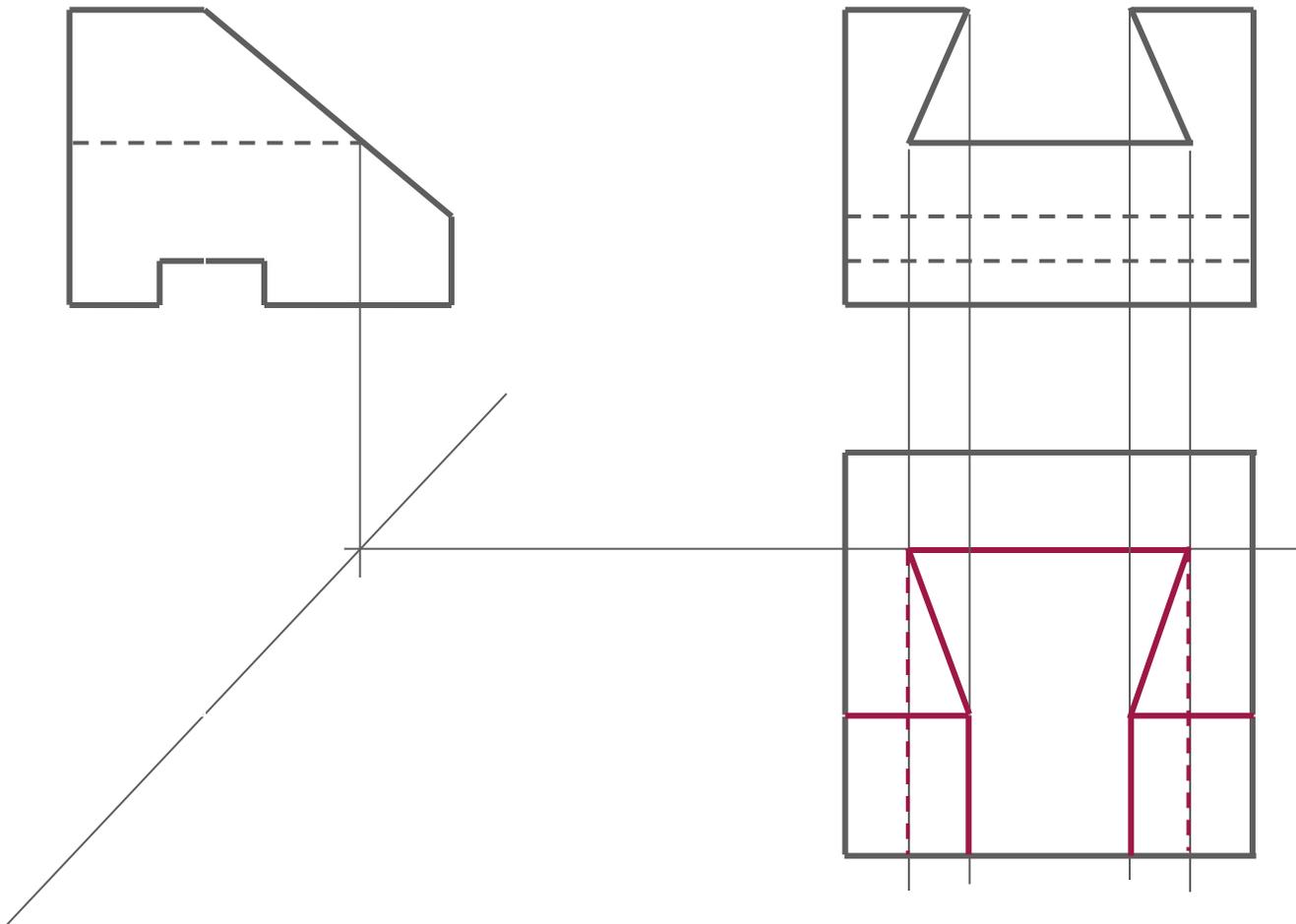
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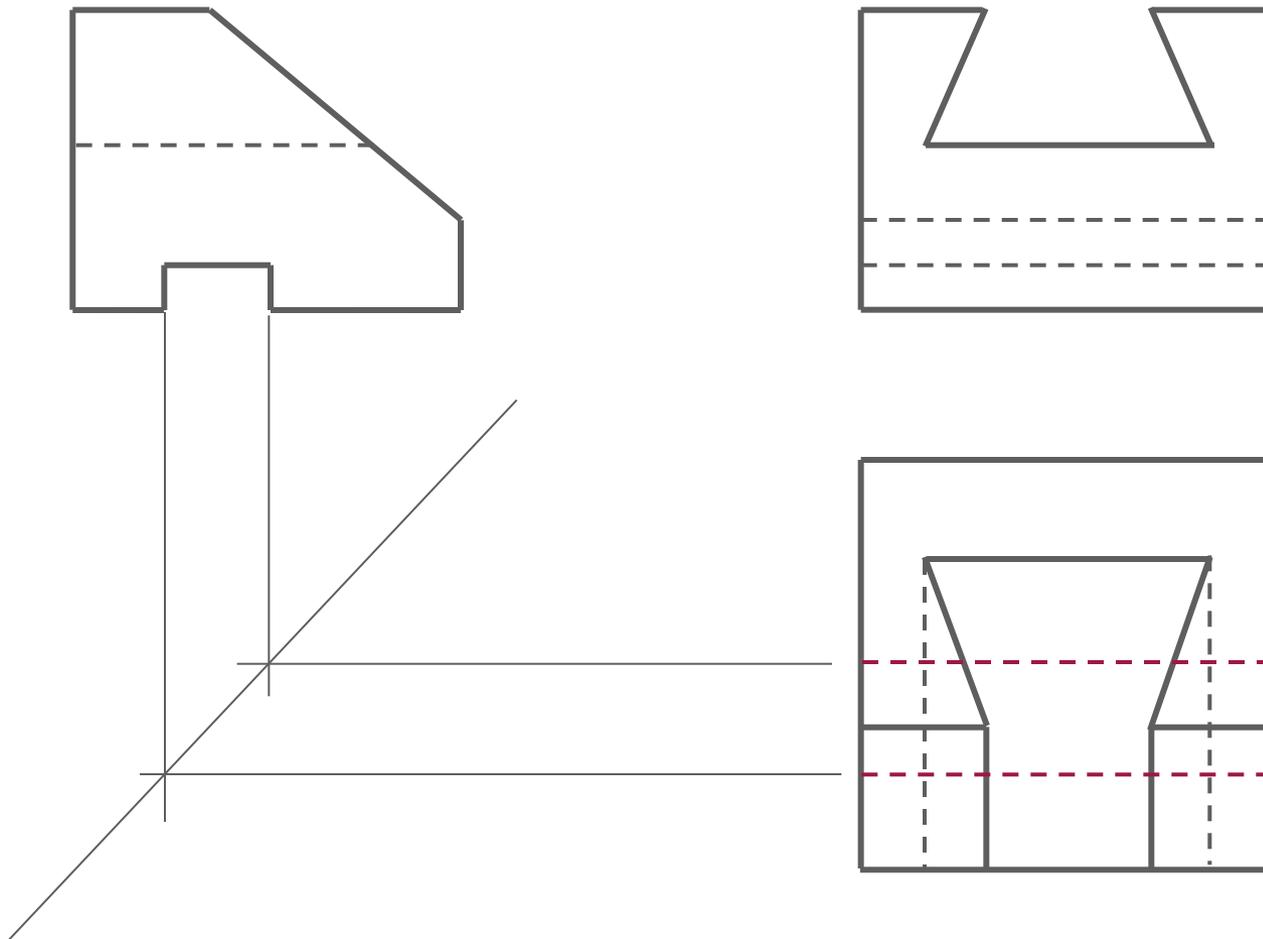
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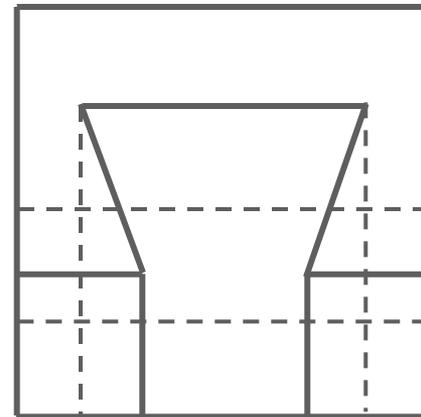
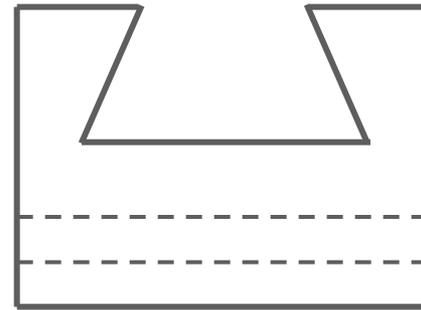
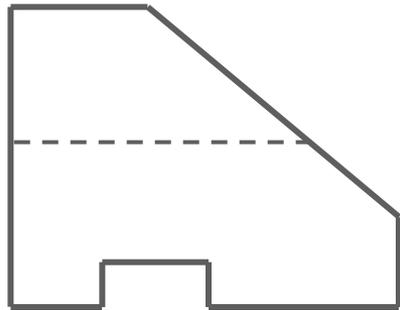
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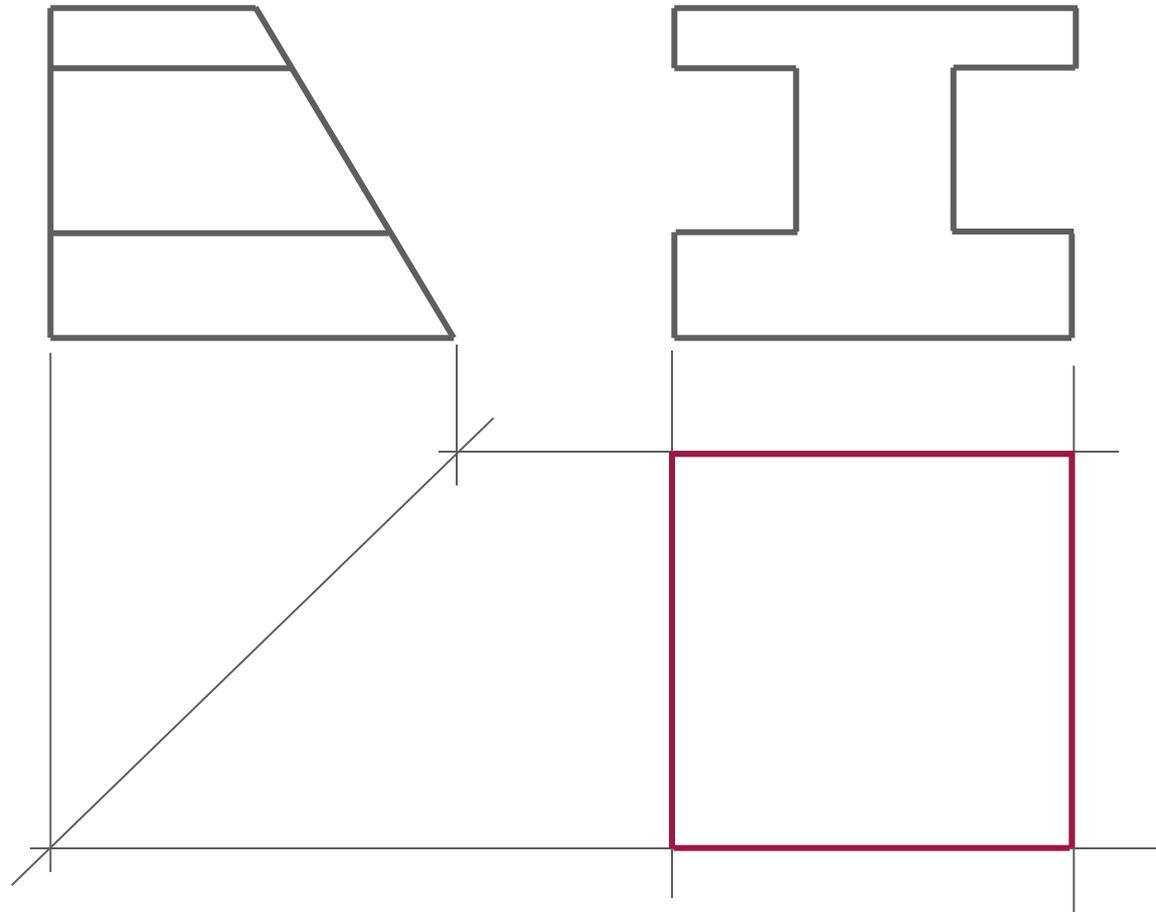
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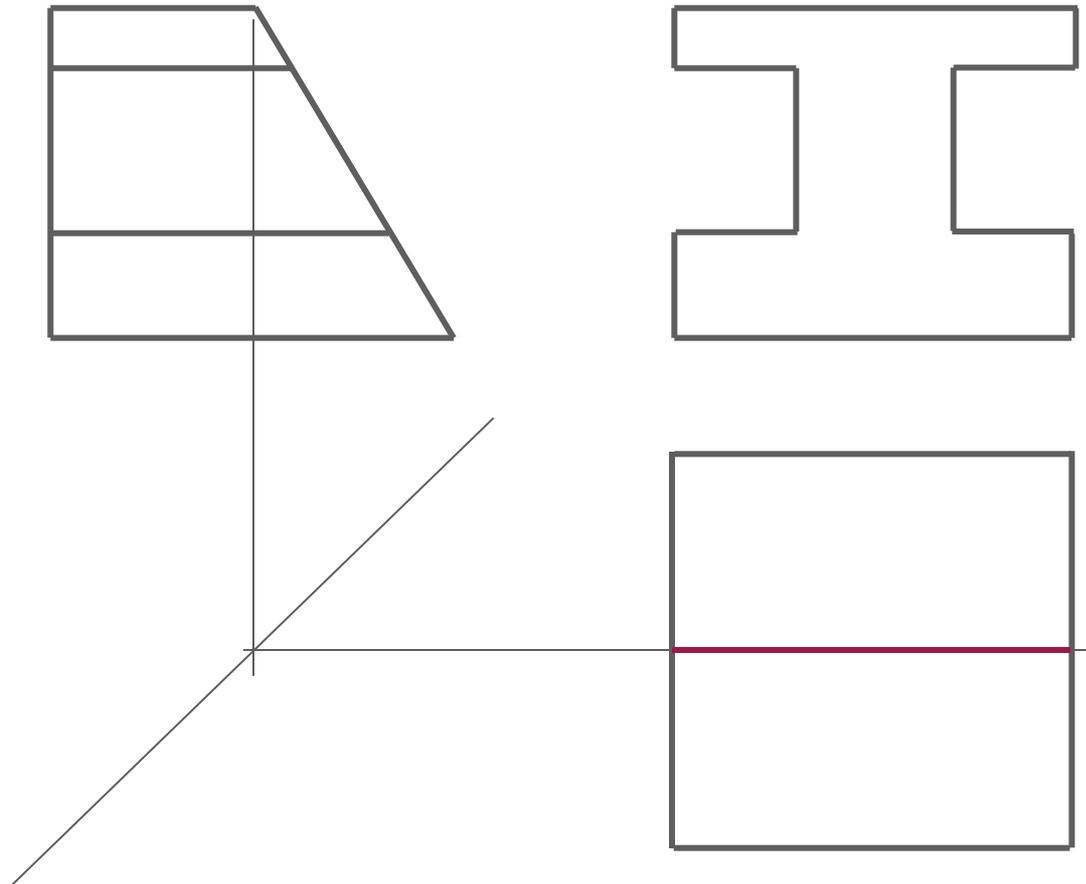
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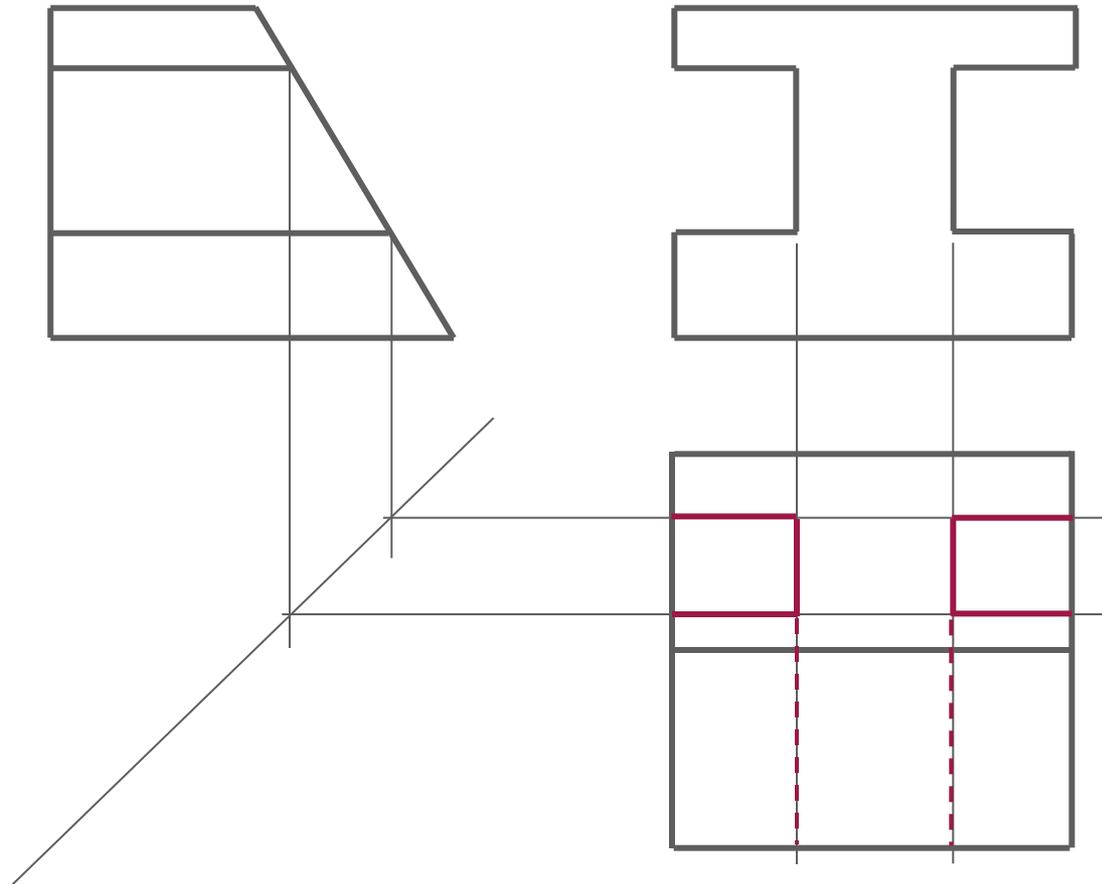
EXERCICE N°3 : LECTURE 4



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