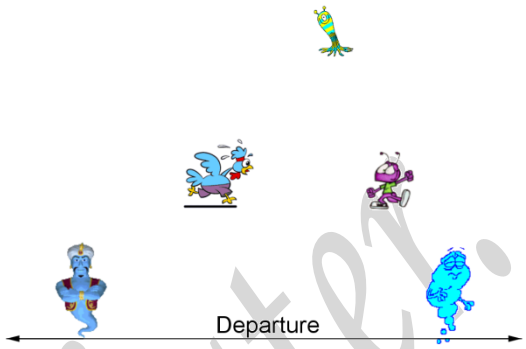
Focusing event:
A race is on hold between a chicken and an ant where the alien is the refree. If the genee and the gohst are $10m$ apart, and both compatetors are midway between the departure line and the refree. Can you find how far is the chicken from the ant?



Midpoint theorem in a triangle

I- Let M & N be the respective midpoints of sides $[AB]$ & $[AC]$ in triangle ABC.

1. Draw a clear figure.
2. Plot K the symmetric of M with respect to N.
   a. Determine the nature of the quadrilateral $AKCM$? Justify.

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   b. Prove that $MKCB$ is a parallelogram.

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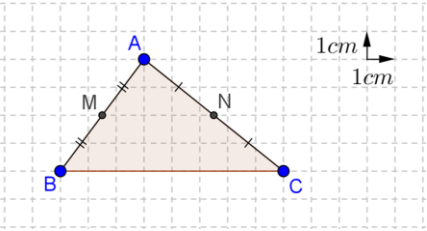
3. Deduce that:
   a. $BC = 2MN$: ……
   b. (MN) parallel (BC): ……

Conclusion:	✓ The segment joining the midpoints of two sides of a triangle is …… ✓ The straight line joining the midpoints of two sides of a triangle is …… **The above statements are the midpoint theorem in any triangle.**

Conditions and usage:	✓ Conditions: To use midpoint theorem we should have: ☞ …….. ✓ Usage: We use the midpoint theorem to: ☞ …….. ☞ ……..

Application: Consider the tiangle ABC:



1) What do the points M & N represent?

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2) Determine:

   a. $[AB]$in terms of $[AM]$:……

      ……

      ……

   b. $[AN]$as a function of $[AC]$:……

      ……

      ……

3) Find the ratio of $[MN]$to $[BC]$.

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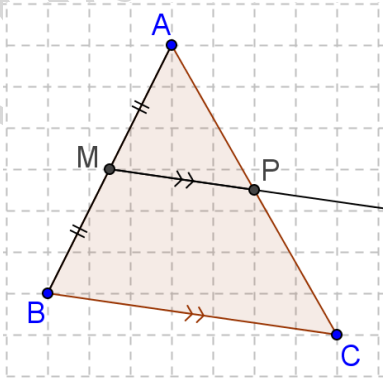
Converse of midpoint theorem in a triangle

II- In the adjacent figure M is the midpoint of$[AB]$ and $[MP)$ is parallel to(BC).



Devise a method to prove that P is the midpoint of$[AC]$.

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Conclusion:	✓ If a line is issued from the midpoint of a side of a triangle and parallel to the second side, then it must cut the third side at ……

Conditions and usage:	✓ Conditions: To use converse of midpoint theorem we should have: ✍ …….. ✍ …….. ✓ Usage: We use the converse of midpoint theorem to: ✍ ……..