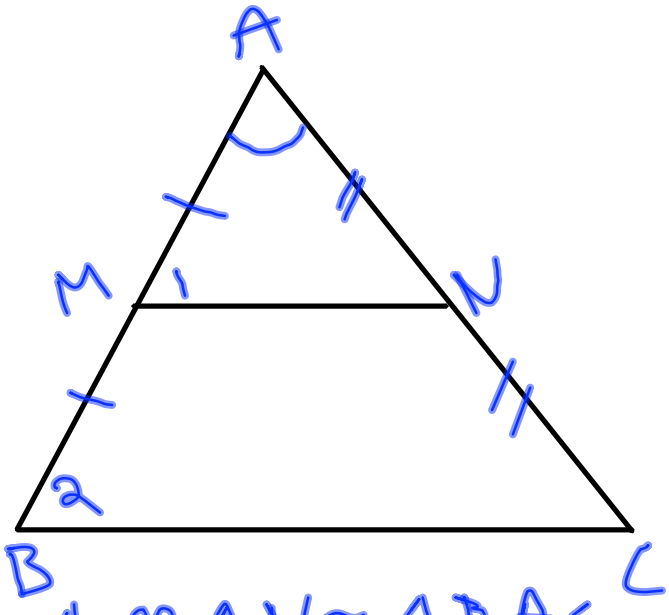


$\triangle MAN \sim \triangle BAC$ SAS~

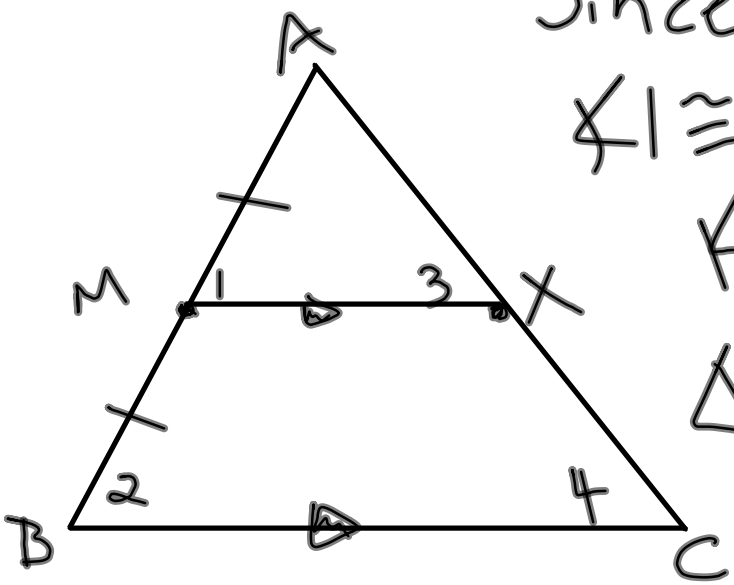
$\frac{AM}{AB} = \frac{AN}{AC} = \frac{1}{2}$

if $\triangle$'s ~, then $\overline{MN} \parallel \overline{BC}$

$\angle 1 \cong \angle 2$, so $\overline{MN} \parallel \overline{BC}$

$\frac{MN}{BC} = \frac{AM}{AB} = \frac{1}{2}$

so $MN = \frac{1}{2} BC$!!!



Since $\overline{MX} \parallel \overline{BC}$,

$\angle 1 \cong \angle 2$ &

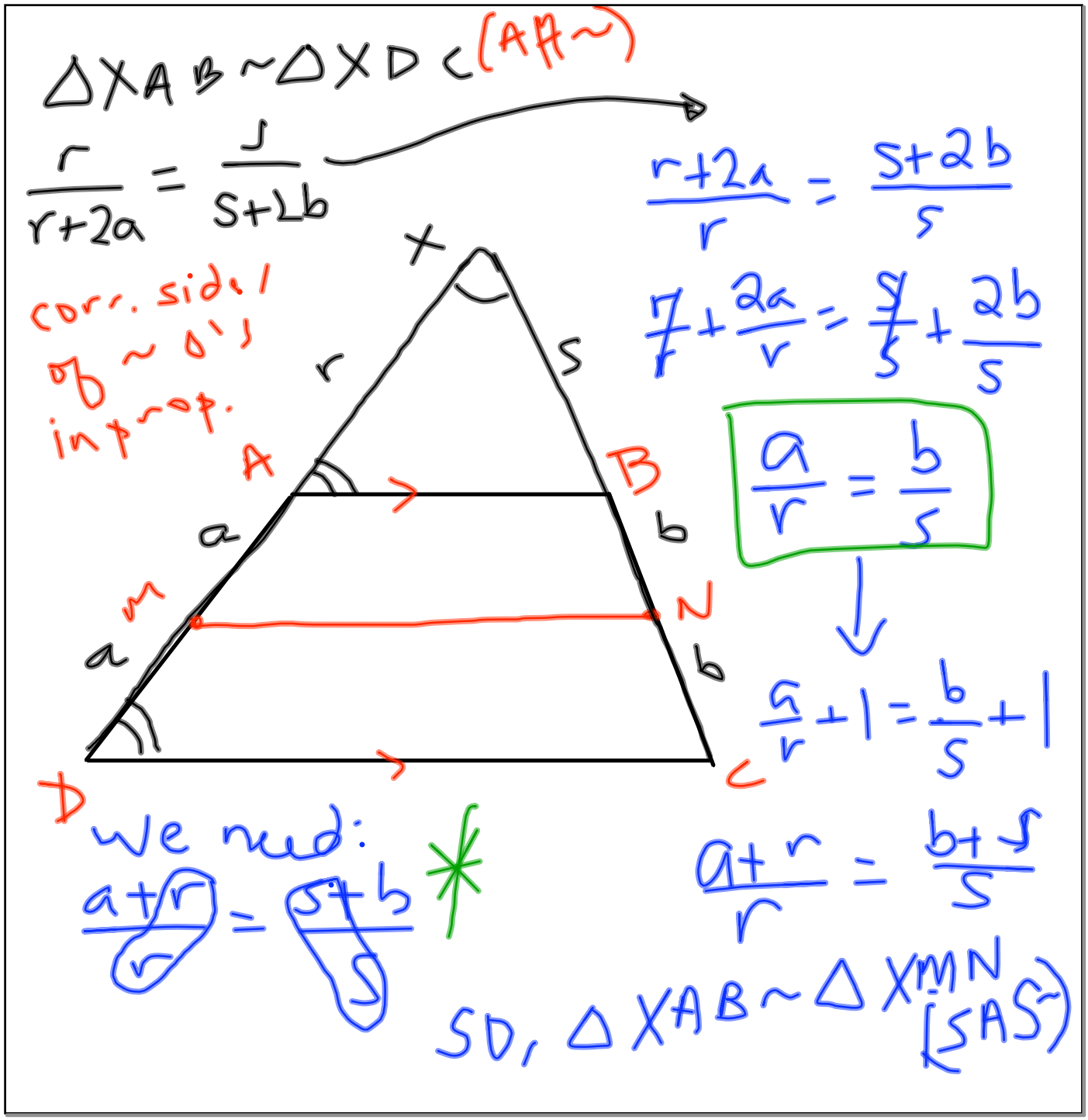
$\angle 3 \cong \angle 4$, so

$\triangle AMX \sim \triangle ABC$

AA~

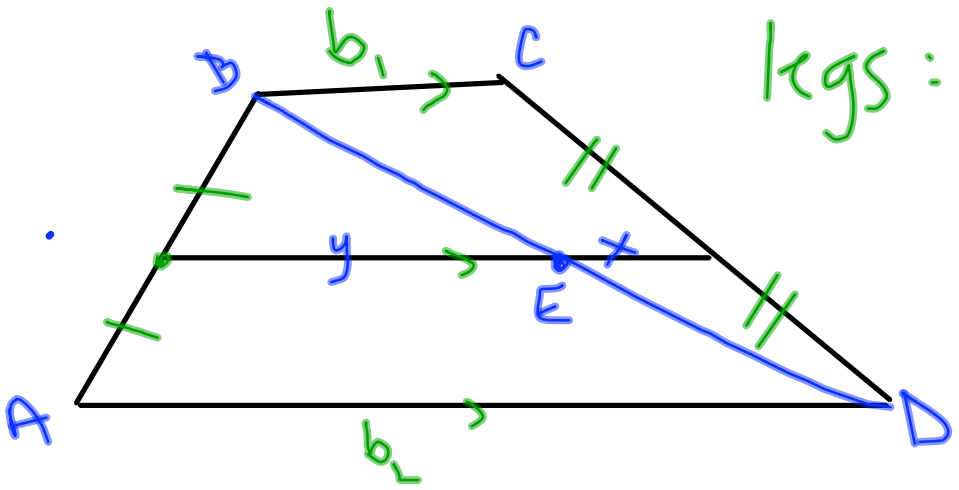
$$\frac{AX}{AC} = \frac{AM}{AB} = \frac{1}{2}$$

if $AX = \frac{1}{2} AC$, pt. then X is mdpt. of $\overline{AC}$.


△XAB ~ △XDC (AA~)
r/(r+2a) = s/(s+2b)
corr. sides of ~ Δ's int~ opt.
X
r
s
A
B
a
b
m
N
a
b
D
C
we need:
(a+r)/r = (s+b)/s
SD, △XAB ~ △XMN (SAS~)
(r+2a)/r = (s+2b)/s
r/r + 2a/r = s/s + 2b/s
a/r = b/s
a/r + 1 = b/s + 1
(a+r)/r = (b+s)/s

bases: ||

legs: ><



$y = \frac{1}{2} b_2$

$x = \frac{1}{2} b_1$

median $= x + y$

$= \frac{1}{2} b_1 + \frac{1}{2} b_2$

$= \frac{1}{2}(b_1 + b_2)$

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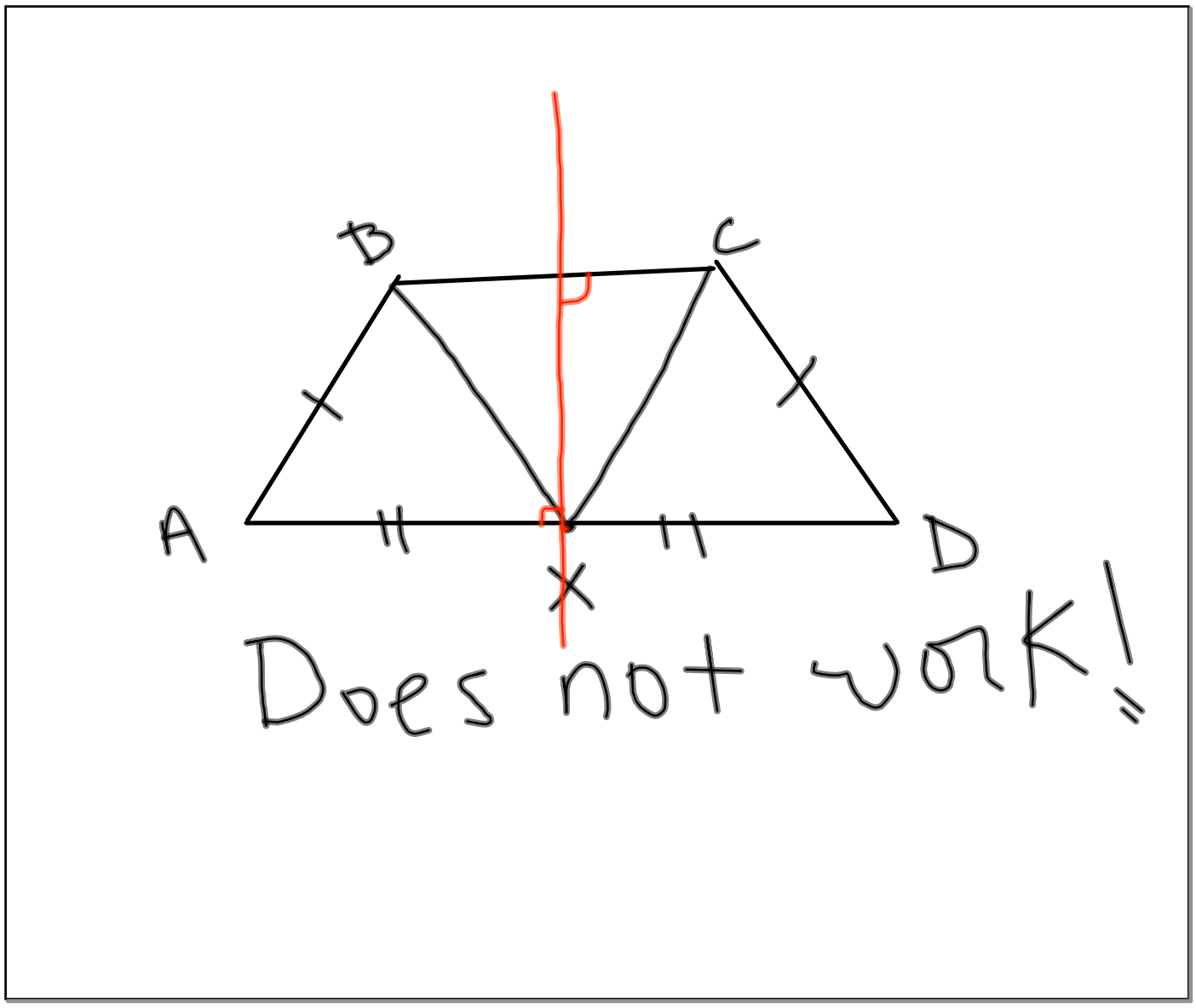

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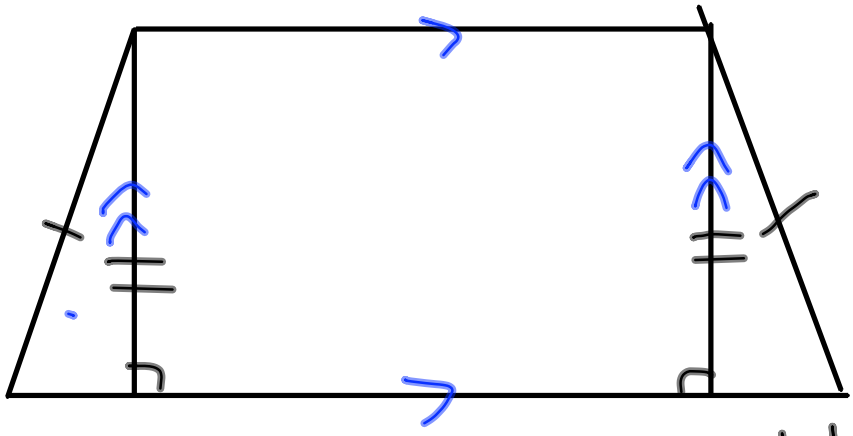

can you use this drawing to prove base ∠'s of □ ≅

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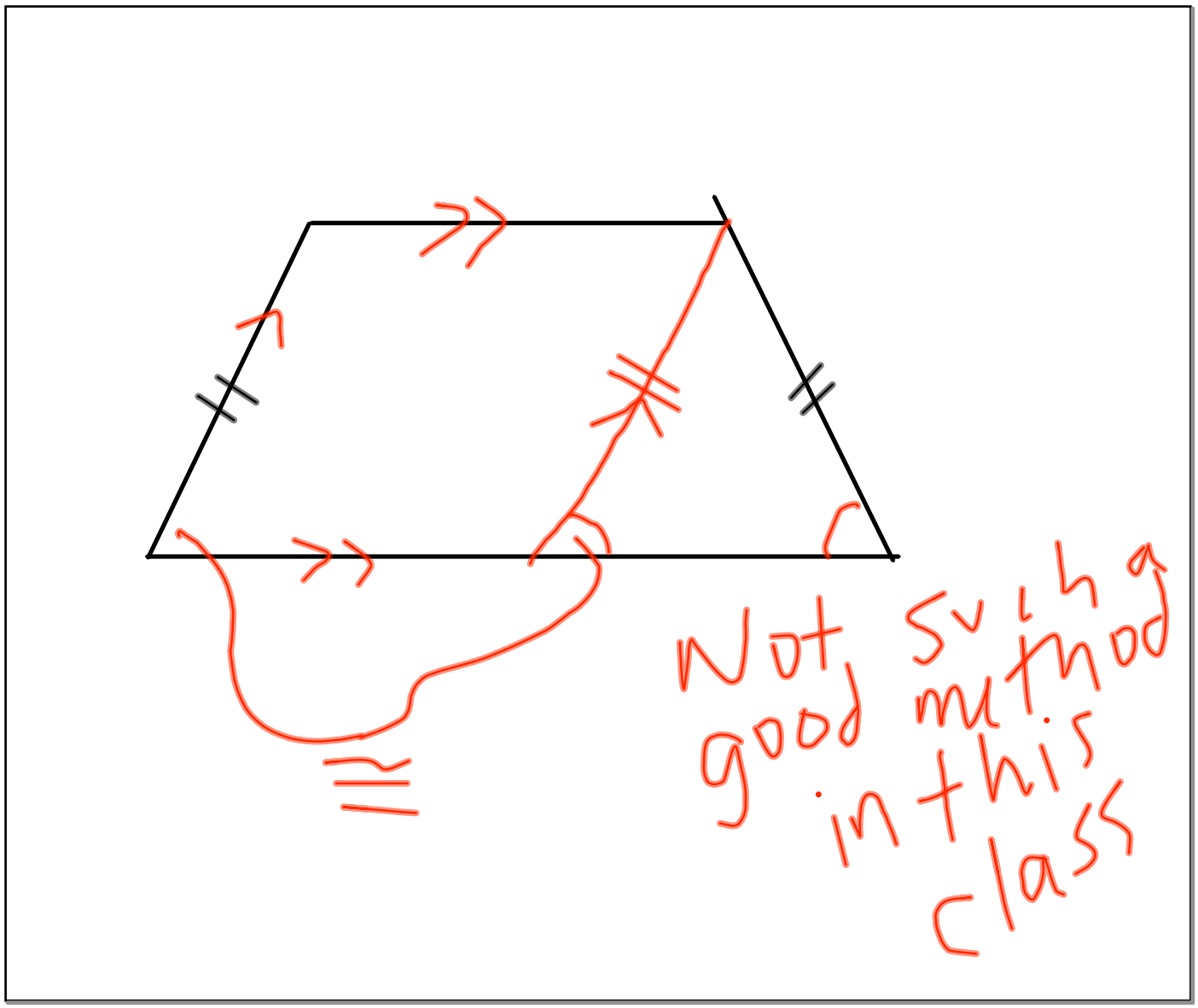

February 01, 2008