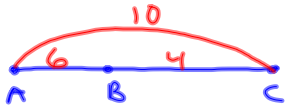
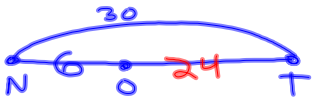
9-3-13
5th Geo

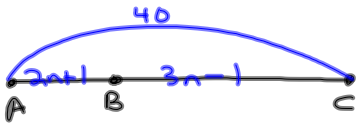
Betweenness of Points

① If B is between A and C with AB = 6 and BC = 4, what is AC? 10



② If O is between N and T with ON = 6 and NT = 30, what is OT? 24





$AB + BC = AC$

$2n+1 + 3n-1 = 40$

$\frac{5n}{5} = \frac{40}{5}$

$n = 8$

③ (10) If T is between N and D with NT = 2n+1, TD = 8, and ND = 19, what is NT?

$NT + TD = ND$

$2n+1 + 8 = 19$

$2n + 9 = 19$

$-9 \quad -9$

$\frac{2n}{2} = \frac{10}{2}$

$n = 5$

$\therefore NT = 2n+1 = 2(5)+1 = 11$

Therefore

④ If B is between A and C with $AC = 10n + 1$, $AB = 2n$, and $BC = 6n + 5$, what is AC?

$AB + BC = AC$

$2n + 6n + 5 = 10n + 1$

$8n + 5 = 10n + 1$

$-8n \quad -8n$

$5 = 2n + 1$

$-1 \quad -1$

$\frac{4}{2} = \frac{2n}{2}$

$2 = n$

Since $AC = 10n + 1$, $AC = 10(2) + 1$

$= 21$

⑤ If C is between X and Y with $CY = 4n$ and $XC = 2n + 1$, what is XY?

(Expression Answer)

$XC + CY = XY$

$2n + 1 + 4n = XY$

$6n + 1 = XY$

⑥ If A is between B and T with $AT = 4n - 1$ and $BT = 6n + 3$, what is AB?

(Expression Answer)

$BA + AT = BT$

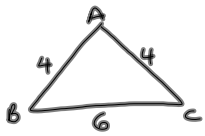
$BA + 4n - 1 = 6n + 3$

$-4n + 1 \quad -4n + 1$

$BA = 2n + 4$

Congruent - exactly the same

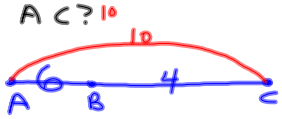
Which line segments are congruent below?



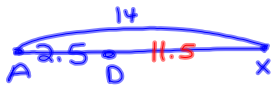
9-3-13
6th Geo

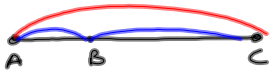
Betweenness of Points

① If B is between A and C with AB = 6 and BC = 4, what is AC? 10



② If D is between A and X with AX = 14 and AD = 2.5, what is DX? 11.5





$AB + BC = AC$

③ (10) If T is between N and D with $NT = 2n+1$, $TD = 8$, and $ND = 19$, what is NT?

$NT + TD = ND$

$2n+1 + 8 = 19$

$2n + 9 = 19$

$-9 \quad -9$

$\frac{2n}{2} = \frac{10}{2}$

$n = 5$

$\therefore NT = 2n+1 = 2(5)+1 = 11$

↑ therefore

④ If B is between A and C with $AC = 25$, $AB = 2n-1$, and $BC = 3n+1$, what is AB?

$AB + BC = AC$

$2n-1 + 3n+1 = 25$

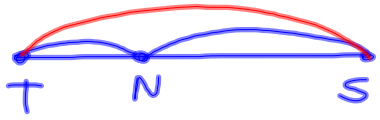
$5n = 25$

$n = 5$

$\therefore AB = 2n-1 = 2(5)-1 = 9$

⑤ If N is between T and S with $TN = 2n-1$ and $TS = 4n$, what is NS?

(Expression Answer)



$TN + NS = TS$

$2n-1 + NS = 4n$

$-2n+1 \quad -2n+1$

$NS = 2n+1$

⑥ If B is between X and R with $BR = 6n-1$ and $XR = 10n+4$, what is BX?

$XB + BR = XR$

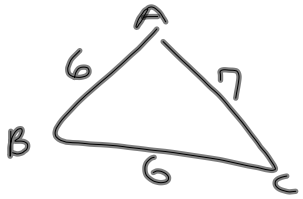
$XB + 6n-1 = 10n+4$

$-6n+1 \quad -6n+1$

$XB = 4n+5$

Congruent → exactly the same

Which 2 below are congruent



$\overline{AB}$ is congruent to $\overline{BC}$

$\overline{AB} \cong \overline{BC}$