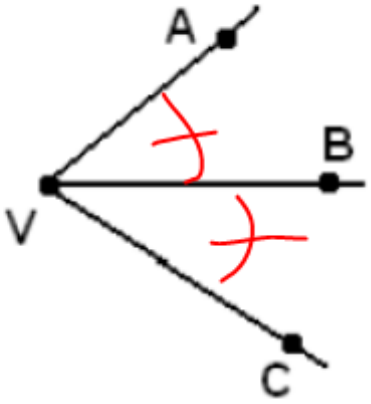
POD: Proof Packet

6

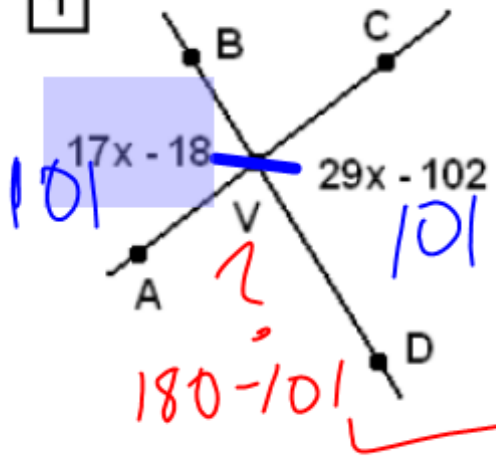
Given: $\overrightarrow{VB}$ bisects $\angle AVC$

Prove: $2 * m\angle AVB = m\angle AVC$



S	R
1)	1) Given
2) $\angle AVB \cong \angle BVC$	2) Def of bisector
3) $m\angle AVB = m\angle BVC$	3) Def of $\cong \angle s$
4) $m\angle AVB + m\angle BVC = m\angle AVC$	4) AAP
5) $m\angle AVB + m\angle AVB = m\angle AVC$	5) Substitution
6) $2\, m\angle AVB = m\angle AVC$	6) Simplify

1



$x = 7$

$m\angle AVB = 17(7) - 18 = 101$

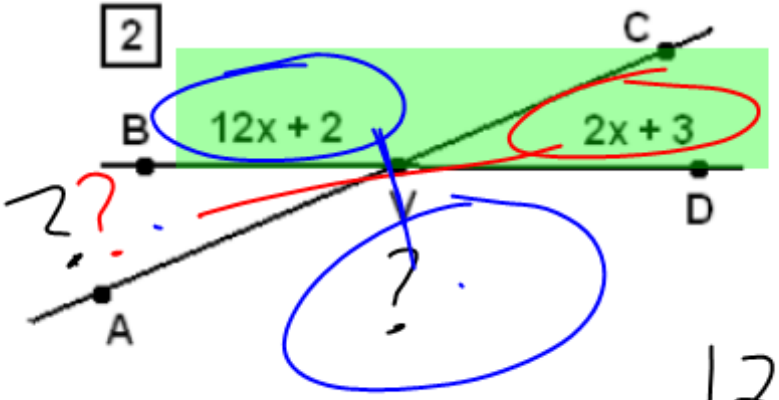
$m\angle AVD = 79$

$17x - 18 = 29x - 102$

$84 = 12x$

$7 = x$

2



$x = 12.5$

$m\angle AVB = 2(12.5) + 3 = 28$

$m\angle AVD = 180 - 28 = 152$

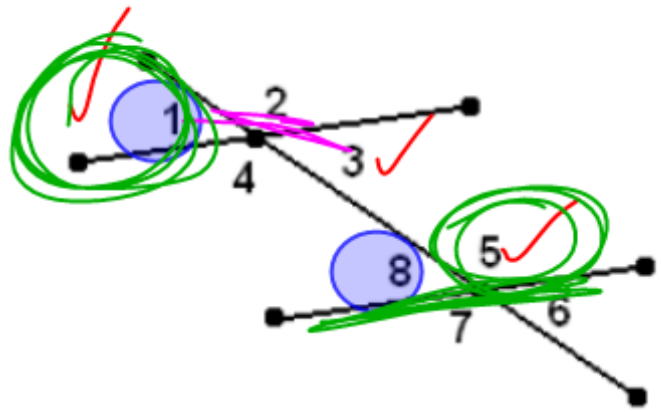
$12x + 2 + 2x + 3 = 180$

$14x + 5 = 180$

$14x = 175$

$x = 12.5$

3



Given:

- ✓ $m\angle 3 = 8y + 3x + 10.45$
- ✓ $m\angle 5 = 18x + 12y + 43.9$
- ✓ $m\angle 1 = 13x - 4y + 3.35$
- $\angle 1 \cong \angle 8$

Find:

$x =$

$y =$

$m\angle 8 =$

(1) $m\angle 1 = m\angle 3$

$13x - 4y + 3.35 = 8y + 3x + 10.45$

$-3x \quad -8y \quad -3.35 \quad -8y \quad -3x \quad -3.35$

$$10x - 12y = 7.1$$

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(2) $m\angle 1 + m\angle 5 = 180$

$13x - 4y + 3.35 + 18x + 12y + 43.9 = 180$

$31x + 8y + 47.25 = 180$

$-47.25 \quad -47.25$

$$31x + 8y = 132.75$$

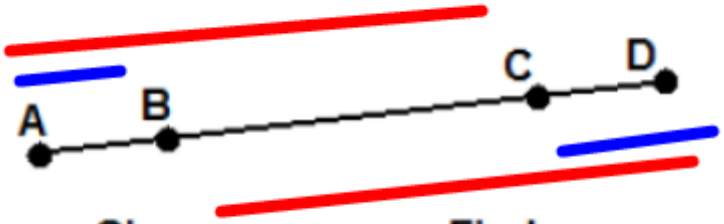
1.) Overlapping Segments Theorem

NOT A VALID REASON IN PROOFS FOR TEST # 2

① If $\overline{AB} \cong \overline{CD}$, then $\overline{AC} \cong \overline{BD}$.

② If $\overline{AC} \cong \overline{BD}$, then $\overline{AB} \cong \overline{CD}$.

[EX 1]



Given:

AB = CD

AB = 2x + 3

AC = 10x - 14

BD = 7x + 0.4

?

Find:

x = 4.8

CD = 12.6

$2(4.8)+3$

$10x-14=7x+0.4$

$3x-14=0.4$

$3x=14.4$

$x=4.8$