

Geometry Honors 2nd half of 1 5 and section 2 5 Angles or Segments Addition and Subtraction

Lesson 074 | Geometry | Segments, angles and geometric basics • Logic, conjectures and proof

<https://www.youtube.com/watch?v=f5iWsTzVcVc>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Vertical angles measure $(11x+9)^\circ$ and 75° . Find x and the adjacent angle.

02

Vertical angles measure $(7x+10)^\circ$ and 59° . Find x and the adjacent angle.

03

Two adjacent angles form a straight angle. Their measures are $(9x+11)^\circ$ and $(180-11-63+9(7-x))^\circ$. Find their sum and decide whether x is uniquely determined.

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04

Vertical angles measure $(2x+13)^\circ$ and 27° . Find x and the adjacent angle.

05

Vertical angles measure $(5x+12)^\circ$ and 37° . Find x and the adjacent angle.

06

Two adjacent angles form a straight angle. Their measures are $(4x+13)^\circ$ and $(180-13-12+4(3-x))^\circ$. Find their sum and decide whether x is uniquely determined.

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01

Vertical angles measure $(11x+9)^\circ$ and 75° . Find x and the adjacent angle.

Vertical angles are equal; $11x+9=75$ gives $x=6$. The vertical pair measures 75° . Each adjacent angle is 105° by the linear-pair theorem.

02

Vertical angles measure $(7x+10)^\circ$ and 59° . Find x and the adjacent angle.

Vertical angles are equal; $7x+10=59$ gives $x=7$. The vertical pair measures 59° . Each adjacent angle is 121° by the linear-pair theorem.

03

Two adjacent angles form a straight angle. Their measures are $(9x+11)^\circ$ and $(180-11-63+9(7-x))^\circ$. Find their sum and decide whether x is uniquely determined.

Expand the second angle: $180-11-9x$. The sum is 180° for every x . There is no unique x ; for two positive angles require $0 < 9x+11 < 180$, or $-11/9 < x < (180-11)/9$.

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04

Vertical angles measure $(2x+13)^\circ$ and 27° . Find x and the adjacent angle.

Vertical angles are equal; $2x+13=27$ gives $x=7$. The vertical pair measures 27° . Each adjacent angle is 153° by the linear-pair theorem.

05

Vertical angles measure $(5x+12)^\circ$ and 37° . Find x and the adjacent angle.

Vertical angles are equal; $5x+12=37$ gives $x=5$. The vertical pair measures 37° . Each adjacent angle is 143° by the linear-pair theorem.

06

Two adjacent angles form a straight angle. Their measures are $(4x+13)^\circ$ and $(180-13-12+4(3-x))^\circ$. Find their sum and decide whether x is uniquely determined.

Expand the second angle: $180-13-4x$. The sum is 180° for every x . There is no unique x ; for two positive angles require $0 < 4x+13 < 180$, or $-13/4 < x < (180-13)/4$.