

Solving Corresponding Parts of Congruent Triangles

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Sauyo High School

Reminder

To solve the corresponding parts of congruent triangles, remember:

Reminder

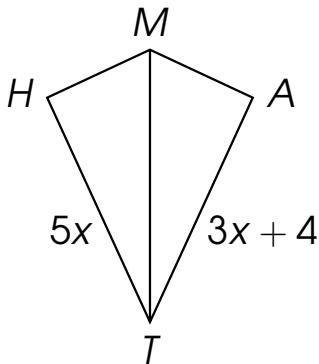
To solve the corresponding parts of congruent triangles, remember:

The Corresponding Parts of Congruent Triangles are Congruent (CPCTC).

Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

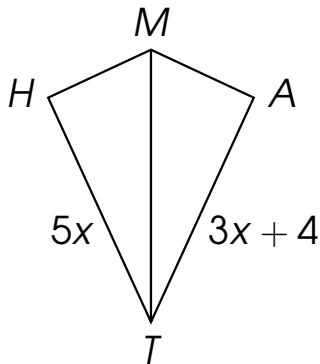


Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

$\overline{HT} \cong$

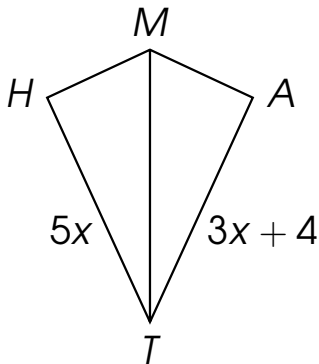


Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

$$\overline{HT} \cong \overline{AT}$$



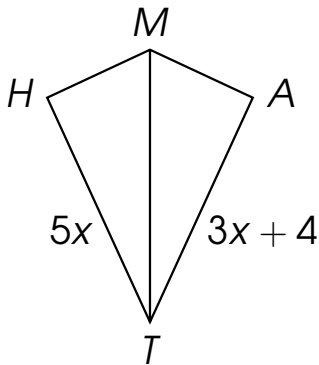
Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$



Example 1

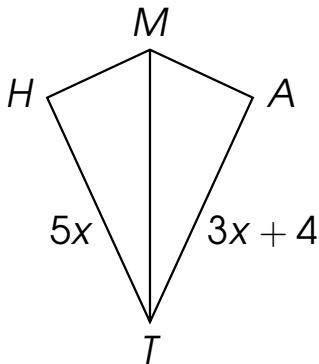
Given: $\triangle MHT \cong \triangle MAT$

Find: x

$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$

$$5x = 3x + 4$$



Example 1

Given: $\triangle MHT \cong \triangle MAT$

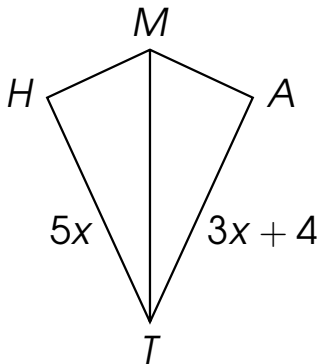
Find: x

$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$

$$5x = 3x + 4$$

$$5x - 3x = 3x - 3x + 4$$



Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

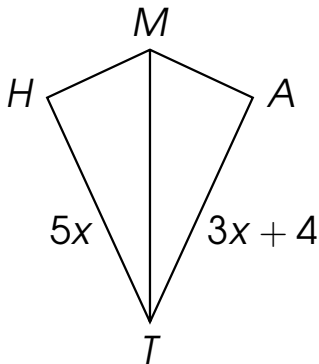
$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$

$$5x = 3x + 4$$

$$5x - 3x = 3x - 3x + 4$$

$$2x = 4$$



Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$

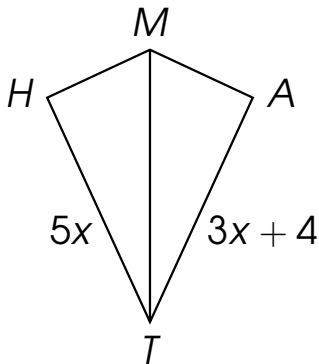
$$5x = 3x + 4$$

$$5x - 3x = 3x - 3x + 4$$

$$2x = 4$$

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

$$x = 2$$



Example 1

Given: $\triangle MHT \cong \triangle MAT$

Find: x

$$\overline{HT} \cong \overline{AT}$$

$$m\overline{HT} = m\overline{AT}$$

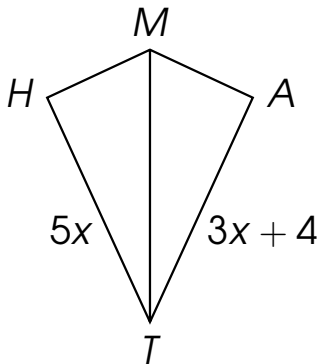
$$5x = 3x + 4$$

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$$2x = 4$$

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

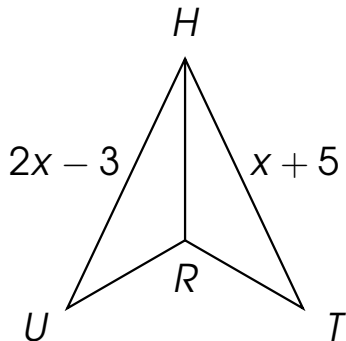
$$x = 2$$



Example 2

Given: $\triangle HRU \cong \triangle HRT$

Find: x

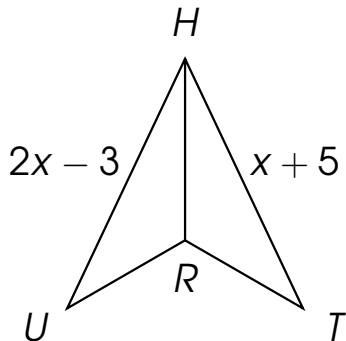


Example 2

Given: $\triangle HRU \cong \triangle HRT$

Find: x

$\overline{HU} \cong$

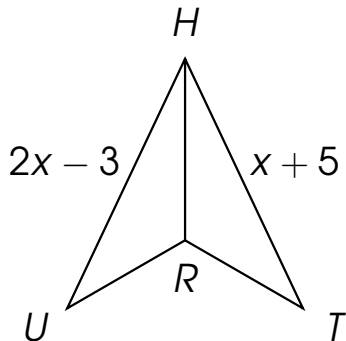


Example 2

Given: $\triangle HRU \cong \triangle HRT$

Find: x

$$\overline{HU} \cong \overline{HT}$$



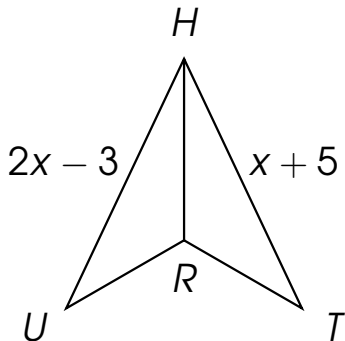
Example 2

Given: $\triangle HRU \cong \triangle HRT$

Find: x

$$\overline{HU} \cong \overline{HT}$$

$$m\overline{HU} = m\overline{HT}$$



Example 2

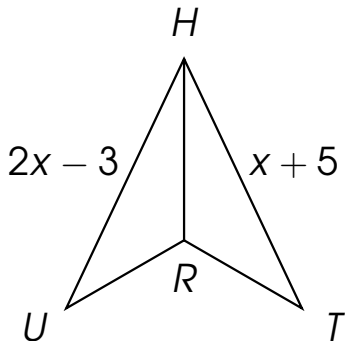
Given: $\triangle HRU \cong \triangle HRT$

Find: x

$$\overline{HU} \cong \overline{HT}$$

$$m\overline{HU} = m\overline{HT}$$

$$2x - 3 = x + 5$$



Example 2

Given: $\triangle HRU \cong \triangle HRT$

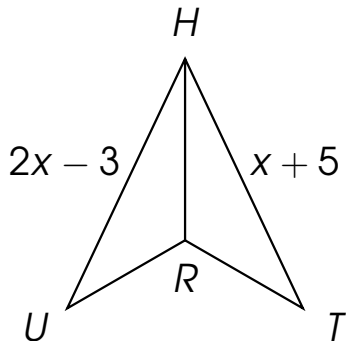
Find: x

$$\overline{HU} \cong \overline{HT}$$

$$m\overline{HU} = m\overline{HT}$$

$$2x - 3 = x + 5$$

$$2x - x - 3 + 3 = x - x + 5 + 3$$



Example 2

Given: $\triangle HRU \cong \triangle HRT$

Find: x

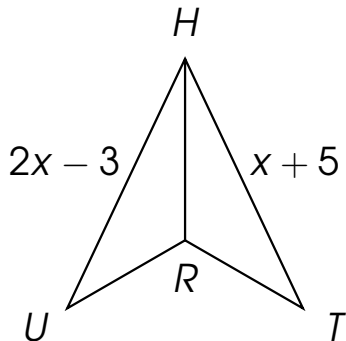
$$\overline{HU} \cong \overline{HT}$$

$$m\overline{HU} = m\overline{HT}$$

$$2x - 3 = x + 5$$

$$2x - x - 3 + 3 = x - x + 5 + 3$$

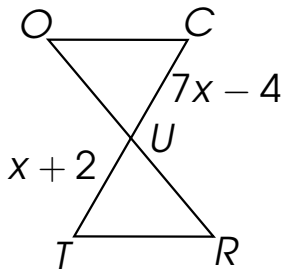
$$x = 8$$



Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

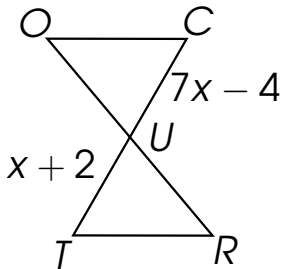


Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

$\overline{CU} \cong$

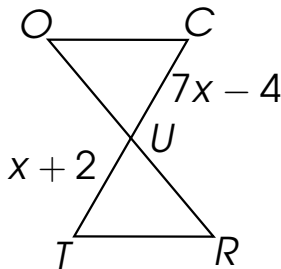


Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

$$\overline{CU} \cong \overline{TU}$$



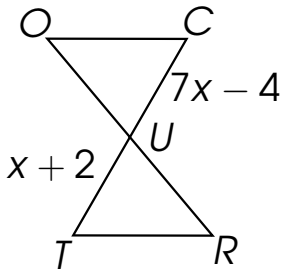
Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$



Example 3

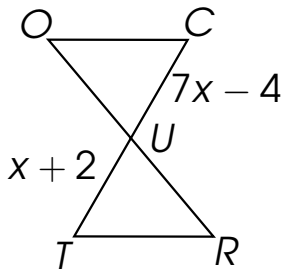
Given: $\triangle OCU \cong \triangle RTU$

Find: x

$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$

$$7x - 4 = x + 2$$



Example 3

Given: $\triangle OCU \cong \triangle RTU$

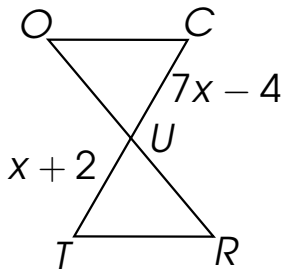
Find: x

$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$

$$7x - 4 = x + 2$$

$$7x - x - 4 + 4 = x - x + 2 + 4$$



Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

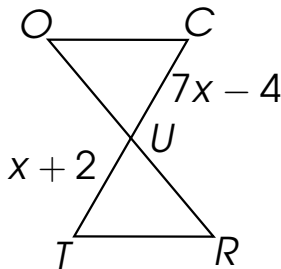
$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$

$$7x - 4 = x + 2$$

$$7x - x - 4 + 4 = x - x + 2 + 4$$

$$6x = 6$$



Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$

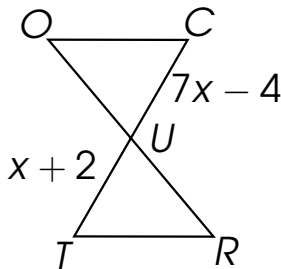
$$7x - 4 = x + 2$$

$$7x - x - 4 + 4 = x - x + 2 + 4$$

$$6x = 6$$

$$\frac{6x}{6} = \frac{6}{6}$$

$$x = 1$$



Example 3

Given: $\triangle OCU \cong \triangle RTU$

Find: x

$$\overline{CU} \cong \overline{TU}$$

$$m\overline{CU} = m\overline{TU}$$

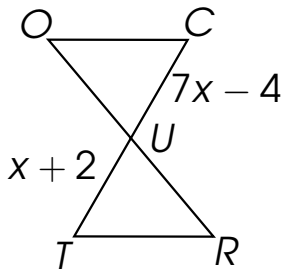
$$7x - 4 = x + 2$$

$$7x - x - 4 + 4 = x - x + 2 + 4$$

$$6x = 6$$

$$\frac{6x}{6} = \frac{6}{6}$$

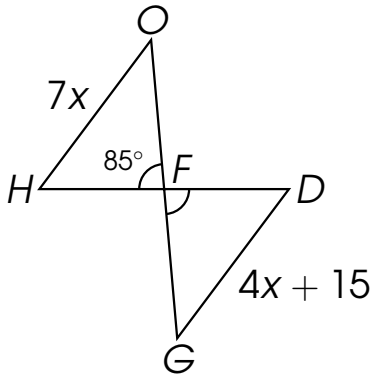
$$x = 1$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

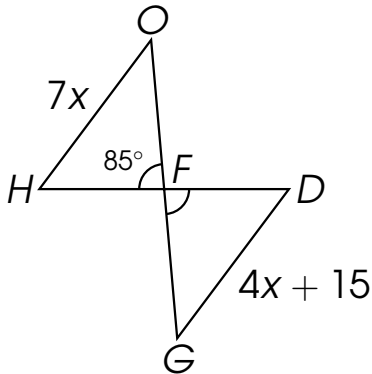


Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$\overline{OH} \cong$

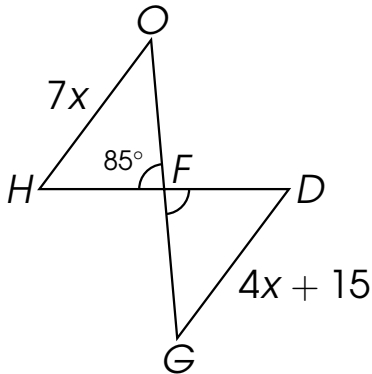


Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$



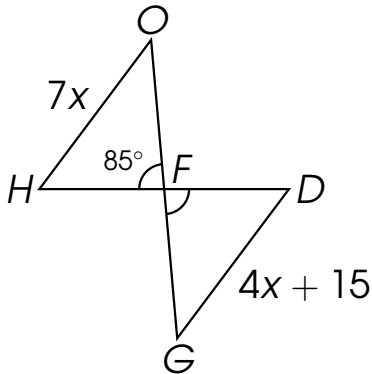
Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$



Example 4

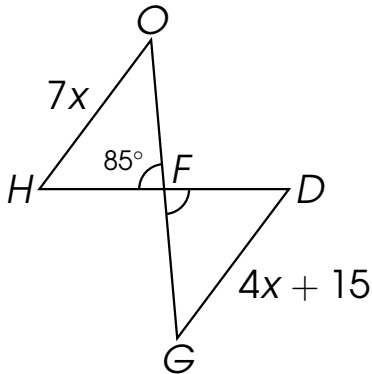
Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

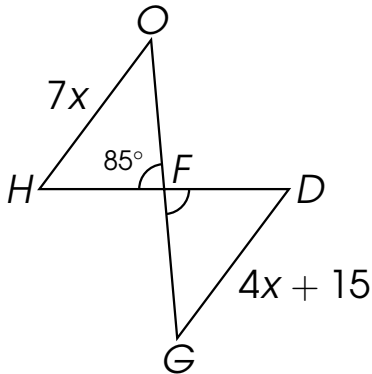
Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

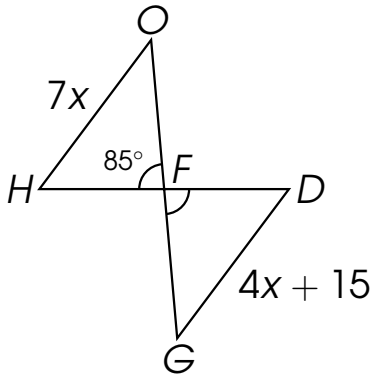
$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

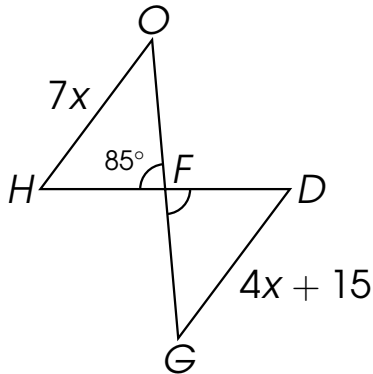
$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$

$$3x = 15$$

$$\frac{3x}{3} = \frac{15}{3}$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

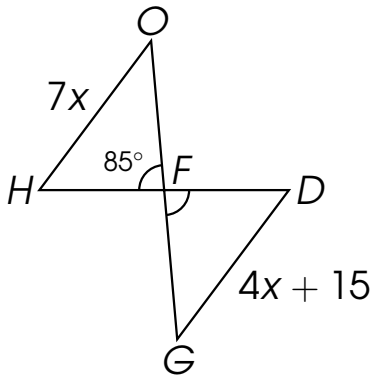
$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$

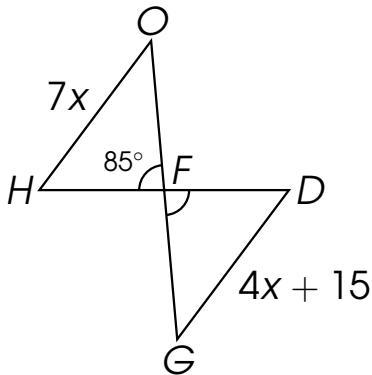
$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

$$m\overline{OH} = 7x$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$

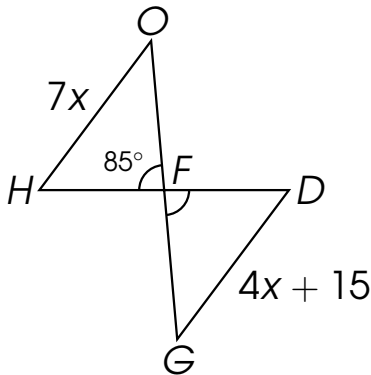
$$3x = 15$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

$$m\overline{OH} = 7x$$

$$m\overline{OH} = 7(5)$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$$\overline{OH} \cong \overline{GD}$$

$$m\overline{OH} = m\overline{GD}$$

$$7x = 4x + 15$$

$$7x - 4x = 4x - 4x + 15$$

$$3x = 15$$

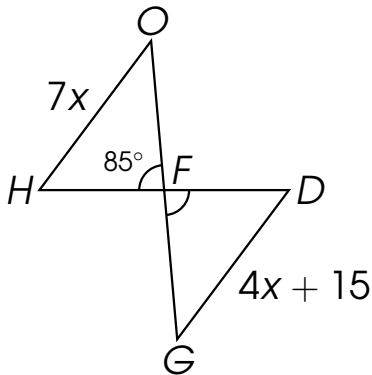
$$\frac{3x}{3} = \frac{15}{3}$$

$$x = 5$$

$$m\overline{OH} = 7x$$

$$m\overline{OH} = 7(5)$$

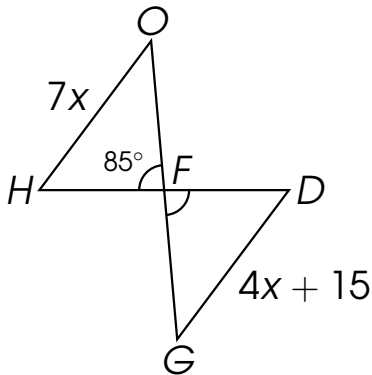
$$m\overline{OH} = 35 \text{ units}$$



Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

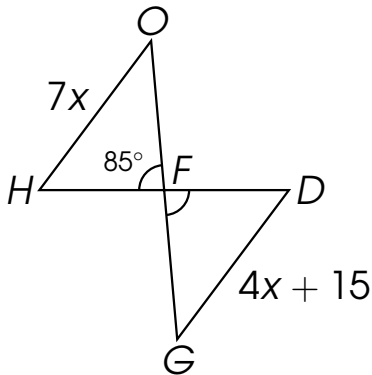


Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\angle OH$ and $m\angle DFG$

$\angle DFG \cong$

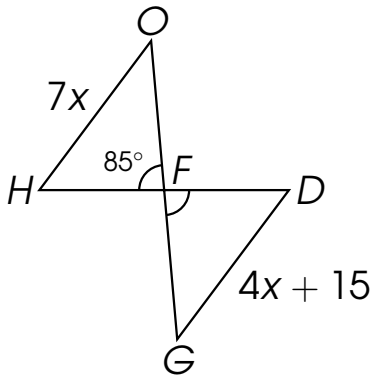


Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\overline{OH}$ and $m\angle DFG$

$\angle DFG \cong \angle HFO$



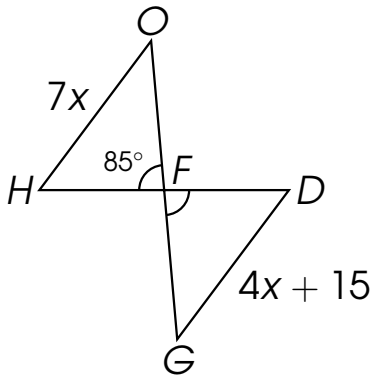
Example 4

Given: $\triangle OFH \cong \triangle GFD$

Find: $m\angle OH$ and $m\angle DFG$

$$\angle DFG \cong \angle HFO$$

$$m\angle DFG = m\angle HFO$$



Example 4

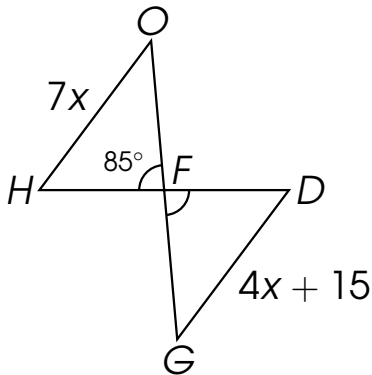
Given: $\triangle OFH \cong \triangle GFD$

Find: $m\angle OH$ and $m\angle DFG$

$$\angle DFG \cong \angle HFO$$

$$m\angle DFG = m\angle HFO$$

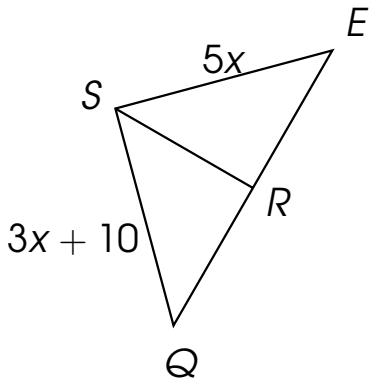
$$m\angle DFG = 85^\circ$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

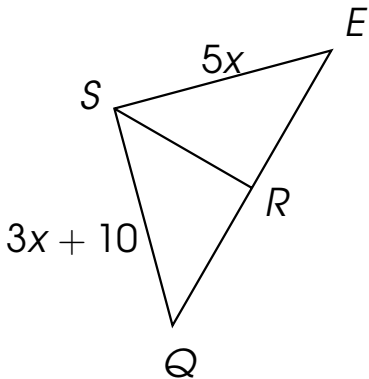


Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$\overline{SQ} \cong$

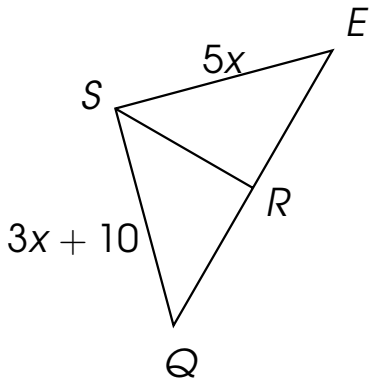


Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$\overline{SQ} \cong \overline{SE}$



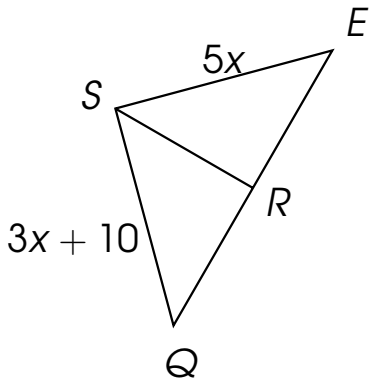
Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$



Example 5

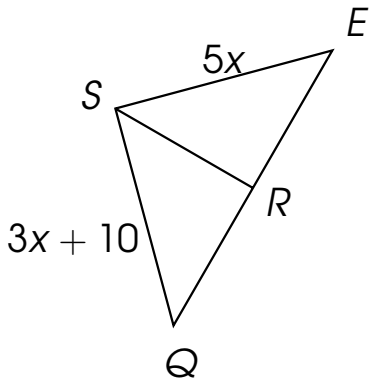
Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

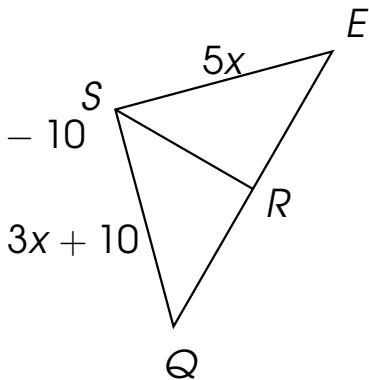
Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

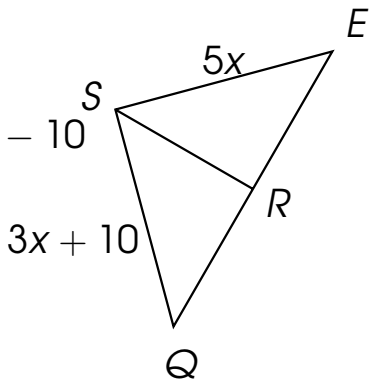
$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

$$-2x = -10$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

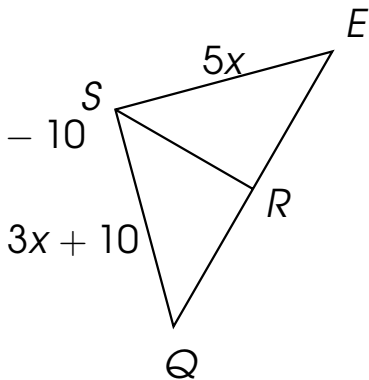
$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

$$-2x = -10$$

$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

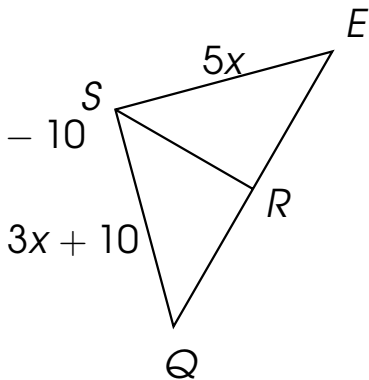
$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

$$-2x = -10$$

$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$

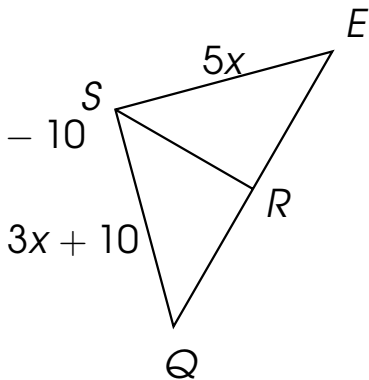
$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

$$-2x = -10$$

$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$

$$m\overline{SQ} = 3x + 10$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

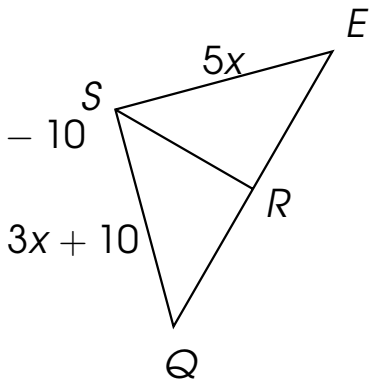
$$-2x = -10$$

$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$

$$m\overline{SQ} = 3x + 10$$

$$m\overline{SQ} = 3(5) + 10$$



Example 5

Given: $\triangle ESR \cong \triangle QSR$

Find: $m\overline{SQ}$

$$\overline{SQ} \cong \overline{SE}$$

$$m\overline{SQ} = m\overline{SE}$$

$$3x + 10 = 5x$$

$$3x - 5x + 10 - 10 = 5x - 5x - 10$$

$$-2x = -10$$

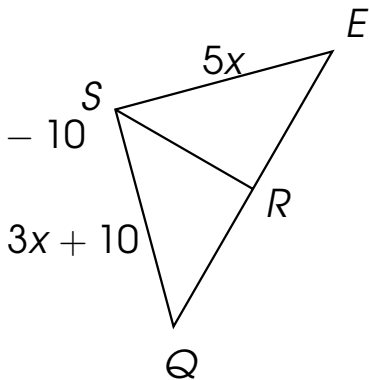
$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$

$$m\overline{SQ} = 3x + 10$$

$$m\overline{SQ} = 3(5) + 10$$

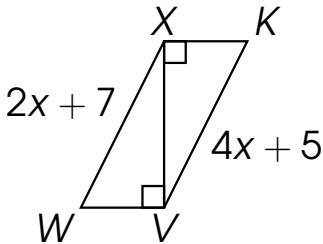
$$m\overline{SQ} = 25 \text{ units}$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

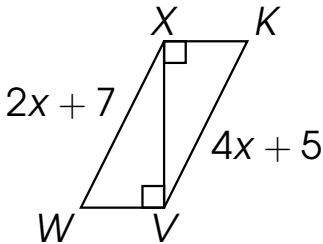


Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$\overline{XW} \cong$

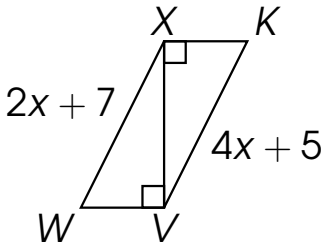


Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$



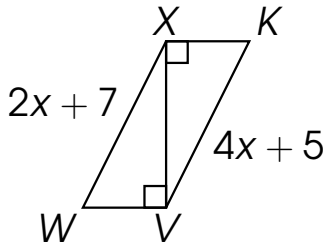
Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$



Example 6

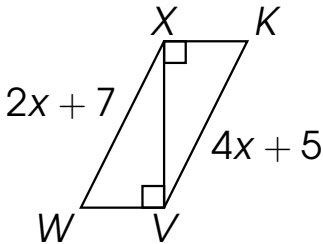
Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

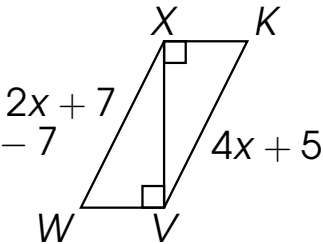
Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

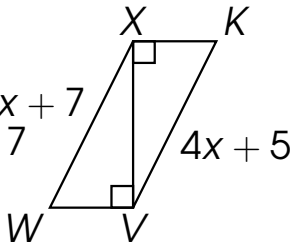
$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

$$-2x = -2$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

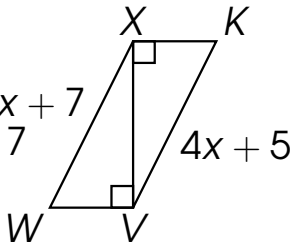
$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

$$-2x = -2$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$



Example 6

Given: $\triangle XWV \cong \triangle VKX$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

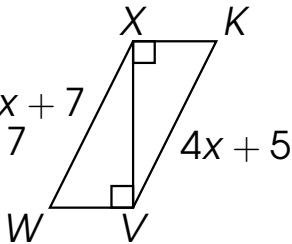
$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

$$-2x = -2$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$

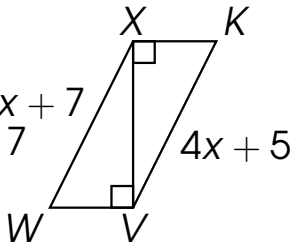
$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

$$-2x = -2$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$

$$m\overline{XW} = 2x + 7$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

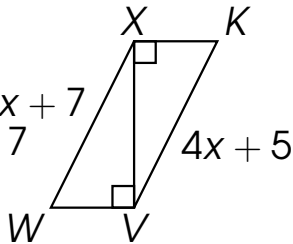
$$-2x = -2$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$

$$m\overline{XW} = 2x + 7$$

$$m\overline{XW} = 2(1) + 7$$



Example 6

Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\overline{XW}$ and $m\angle K$

$$\overline{XW} \cong \overline{VK}$$

$$m\overline{XW} = m\overline{VK}$$

$$2x + 7 = 4x + 5$$

$$2x - 4x + 7 - 7 = 4x - 4x + 5 - 7$$

$$-2x = -2$$

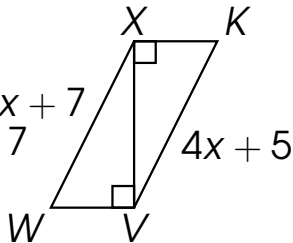
$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$

$$m\overline{XW} = 2x + 7$$

$$m\overline{XW} = 2(1) + 7$$

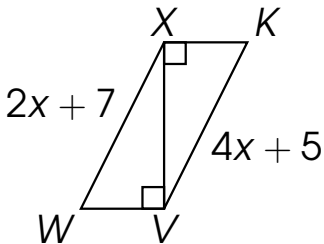
$$m\overline{XW} = 9 \text{ units}$$



Example 6

Given: $\triangle XVW \cong \triangle VXK$, $m\angle W = 70^\circ$

Find: $m\angle X$ and $m\angle K$

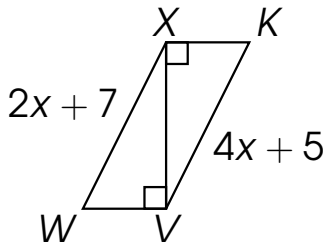


Example 6

Given: $\triangle XVW \cong \triangle V XK$, $m\angle W = 70^\circ$

Find: $m\angle X$ and $m\angle K$

$$\angle K \cong$$

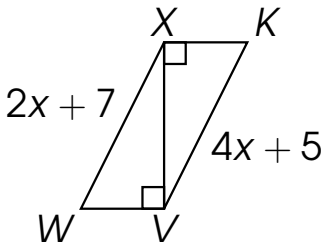


Example 6

Given: $\triangle XVW \cong \triangle V XK$, $m\angle W = 70^\circ$

Find: $m\angle X$ and $m\angle K$

$$\angle K \cong \angle W$$



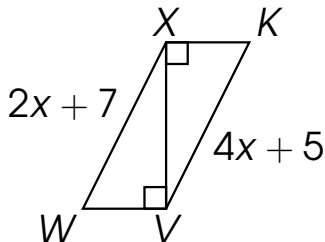
Example 6

Given: $\triangle XVW \cong \triangle V XK$, $m\angle W = 70^\circ$

Find: $m\angle X$ and $m\angle K$

$$\angle K \cong \angle W$$

$$m\angle K = m\angle W$$



Example 6

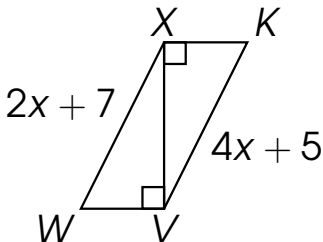
Given: $\triangle X VW \cong \triangle V X K$, $m\angle W = 70^\circ$

Find: $m\angle X$ and $m\angle K$

$$\angle K \cong \angle W$$

$$m\angle K = m\angle W$$

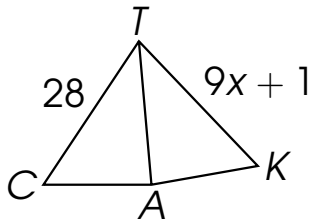
$$m\angle K = 70^\circ$$



Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

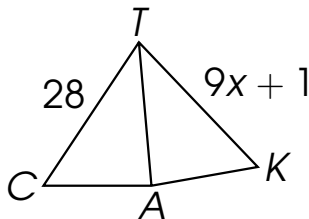


Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong$$

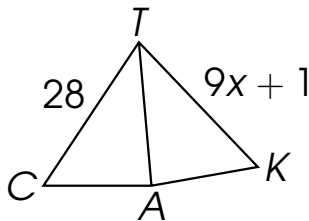


Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong \overline{TK}$$



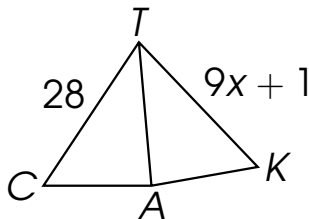
Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$



Example 7

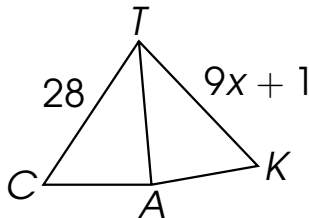
Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$

$$28 = 9x + 1$$



Example 7

Given: $\triangle TAC \cong \triangle TAK$

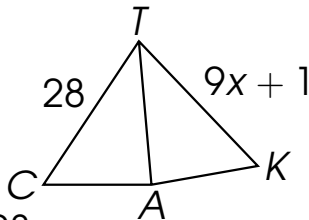
Find: x

$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$

$$28 = 9x + 1$$

$$28 - 28 - 9x = 9x - 9x + 1 - 28$$



Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

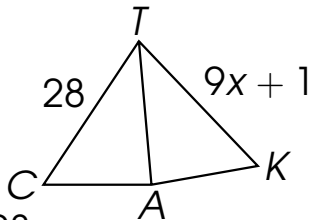
$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$

$$28 = 9x + 1$$

$$28 - 28 - 9x = 9x - 9x + 1 - 28$$

$$-9x = -27$$



Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$

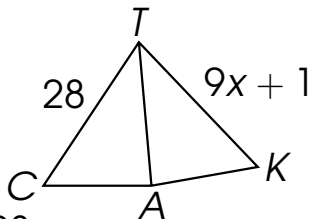
$$28 = 9x + 1$$

$$28 - 28 - 9x = 9x - 9x + 1 - 28$$

$$-9x = -27$$

$$\frac{-9x}{-9} = \frac{-27}{-9}$$

$$x = 3$$



Example 7

Given: $\triangle TAC \cong \triangle TAK$

Find: x

$$\overline{TC} \cong \overline{TK}$$

$$m\overline{TC} = m\overline{TK}$$

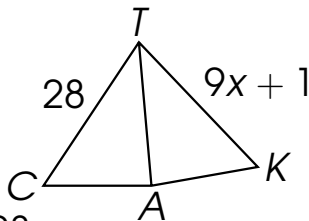
$$28 = 9x + 1$$

$$28 - 28 - 9x = 9x - 9x + 1 - 28$$

$$-9x = -27$$

$$\frac{-9x}{-9} = \frac{-27}{-9}$$

$$x = 3$$

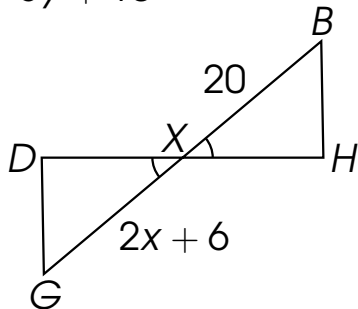


Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y



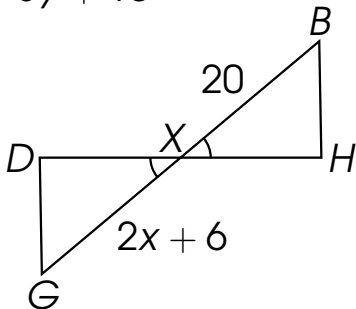
Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$\overline{XG} \cong$



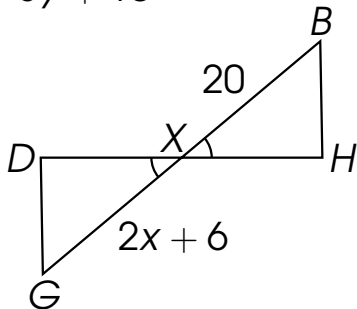
Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$\overline{XG} \cong \overline{XB}$



Example 8

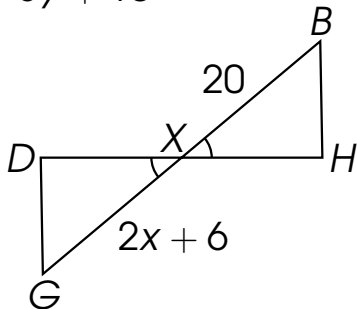
Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,

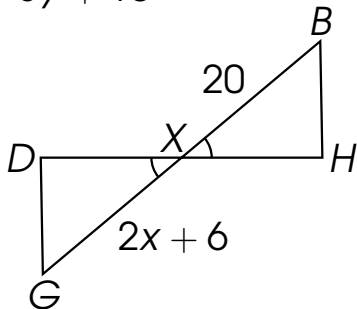
$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$

$$2x + 6 = 20$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

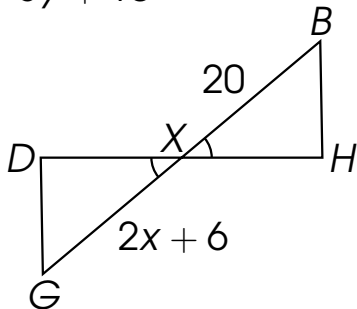
Find: x and y

$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$

$$2x + 6 = 20$$

$$2x + 6 - 6 = 20 - 6$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

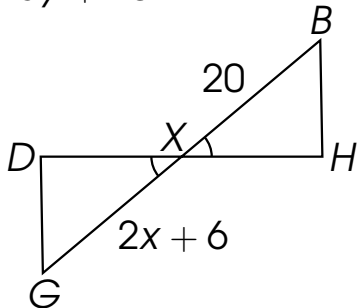
$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$

$$2x + 6 = 20$$

$$2x + 6 - 6 = 20 - 6$$

$$2x = 14$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$

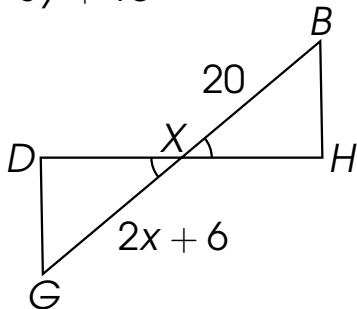
$$2x + 6 = 20$$

$$2x + 6 - 6 = 20 - 6$$

$$2x = 14$$

$$2x = 14$$

$$\frac{2x}{2} = \frac{14}{2}$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,

$m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$

Find: x and y

$$\overline{XG} \cong \overline{XB}$$

$$m\overline{XG} = m\overline{XB}$$

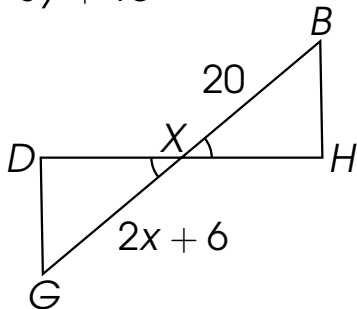
$$2x + 6 = 20$$

$$2x + 6 - 6 = 20 - 6$$

$$2x = 14$$

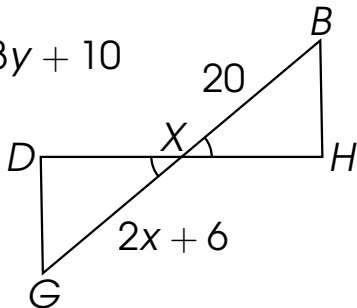
$$\frac{2x}{2} = \frac{14}{2}$$

$$x = 7$$



Example 8

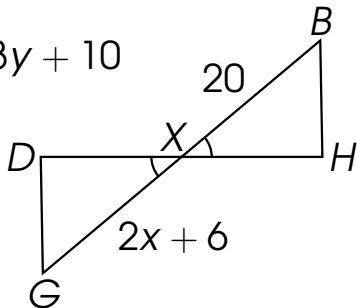
Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

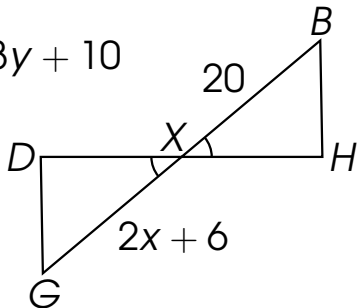
$\angle DXG \cong$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

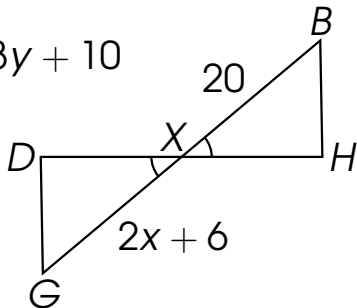
$$\angle DXG \cong \angle BXH$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

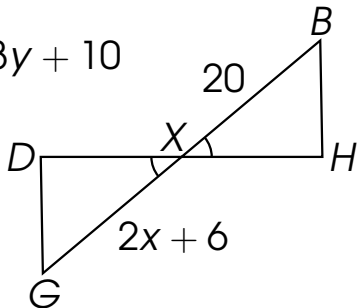
$$\angle DXG \cong \angle BXH$$
$$m\angle DXG = m\angle BXH$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

$$\begin{aligned}\angle DXG &\cong \angle BXH \\ m\angle DXG &= m\angle BXH \\ 3y + 10 &= y + 30\end{aligned}$$



Example 8

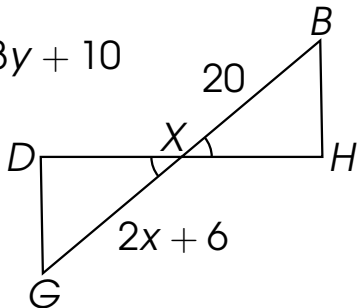
Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

$$\angle DXG \cong \angle BXH$$

$$m\angle DXG = m\angle BXH$$

$$3y + 10 = y + 30$$

$$3y - y + 10 - 10 = y - y + 30 - 10$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

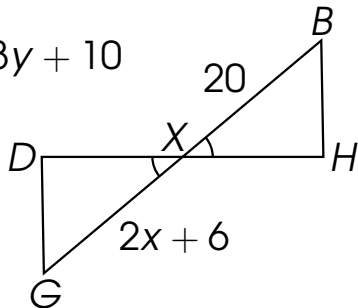
$$\angle DXG \cong \angle BXH$$

$$m\angle DXG = m\angle BXH$$

$$3y + 10 = y + 30$$

$$3y - y + 10 - 10 = y - y + 30 - 10$$

$$2y = 20$$



Example 8

Given: $\triangle BXH \cong \triangle GXD$,
 $m\angle BXH = y + 30$, $m\angle DXG = 3y + 10$
Find: x and y

$$\angle DXG \cong \angle BXH$$

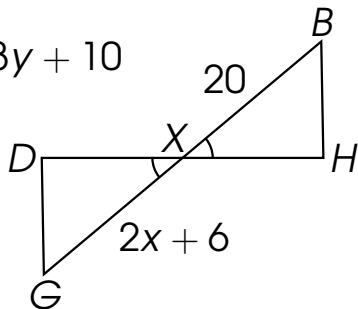
$$m\angle DXG = m\angle BXH$$

$$3y + 10 = y + 30$$

$$3y - y + 10 - 10 = y - y + 30 - 10$$

$$2y = 20$$

$$\frac{2y}{2} = \frac{20}{2}$$



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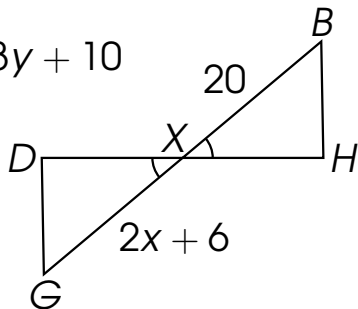
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$$y = 10$$



Thank you for watching.