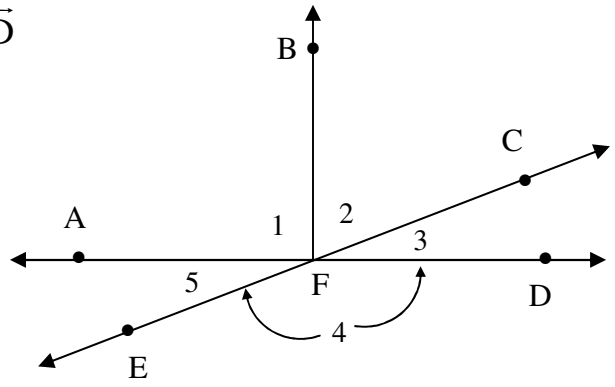
Ch 1-4 Review

(1) Refer to the figure to the right. **Given:** $\overrightarrow{FB} \perp \overleftarrow{AD}$
Supply a reason to justify each statement in the following sequence.



(a) $\angle 1 \cong \angle BFD$

(b) $\angle 2$ and $\angle 3$ are complementary

(c) $m\angle 2 + m\angle 3 = 90$

(d) $\angle 1$ is a right angle

(e) $m\angle 1 = 90$

(f) $m\angle 2 + m\angle 3 = m\angle 1$

(g) $m\angle BFD = m\angle 2 + m\angle 3$

(h) $m\angle 3 = m\angle 5$

(i) $m\angle 2 + m\angle 5 = 90$

(j) $\angle 2$ and $\angle 5$ are complementary

(k) $m\angle 4 + m\angle 5 = 180$

(l) $\angle 4$ and $\angle 5$ are supplementary

(m) $m\angle 1 + m\angle 2 + m\angle 3 = 180$

(n) $AF + DF = AD$

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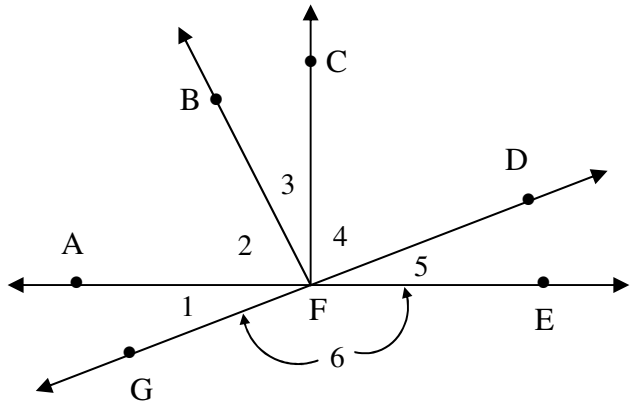
(2) Given the figure to the right,
$\overrightarrow{FC} \perp \overleftarrow{AE}$, $m\angle AFD = 155°$,
$m\angle 2 = 4\, m\angle 3$, find the measures of all the numbered angles.



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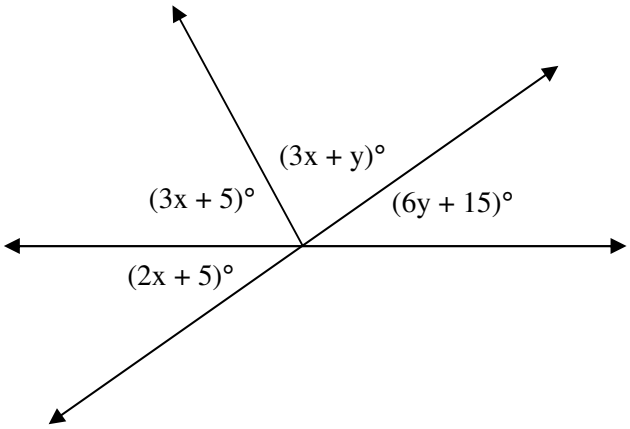
(3) Given the figure as marked, find the values of x and y.



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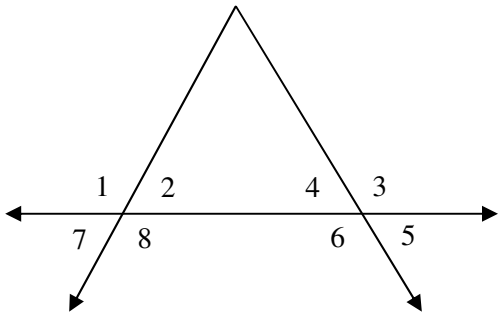
(4) Find the measure of an angle if 80° less than three times its supplement is 70° more than five times its complement.

Ch 1-4 Review

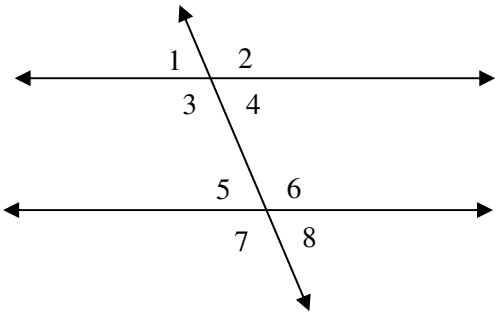
(5)



Given: $\angle 1 \cong \angle 3$

Prove: $\angle 2 \cong \angle 4$

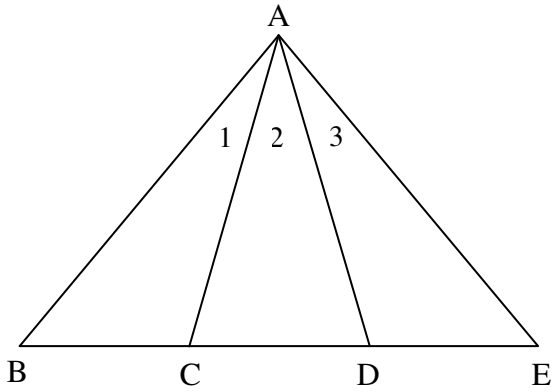
(6)



Given: $\angle 1$ and $\angle 7$ are supplementary

Prove: $\angle 6 \cong \angle 3$

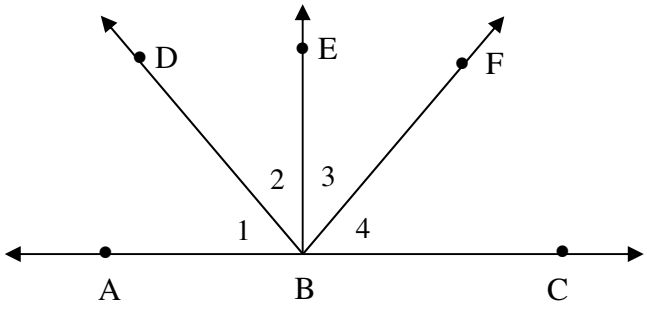
(7)



Given: $\overrightarrow{AC}$ bisects $\angle DAB$
$\overrightarrow{AD}$ bisects $\angle CAE$

Prove: $\angle 1 \cong \angle 3$

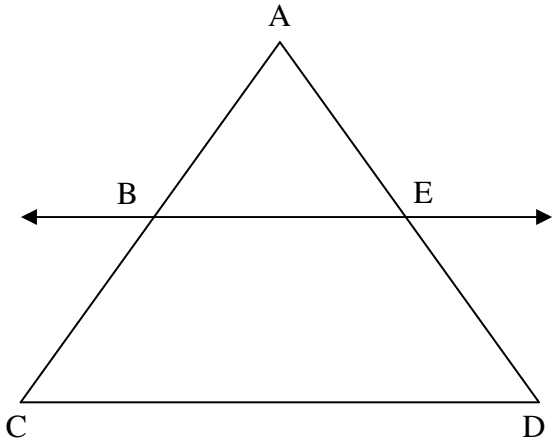
(8)



Given: $\overleftrightarrow{BE} \perp \overleftrightarrow{AC}$
$\angle 1 \cong \angle 4$

Prove: $\angle 2 \cong \angle 3$

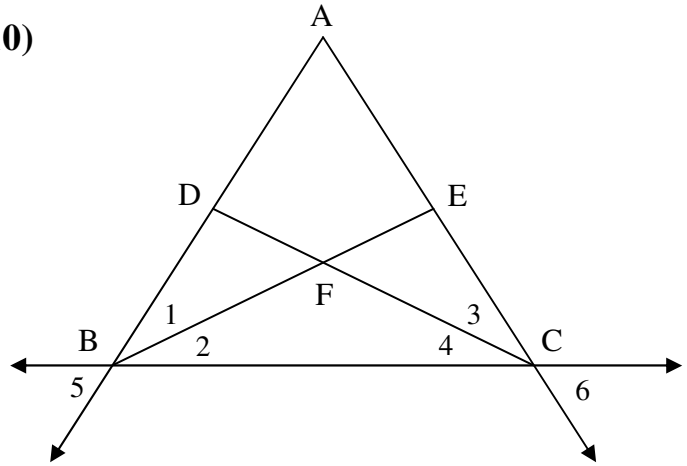
(9)



Given: $\overleftrightarrow{BE}$ bisects $\overline{AC}$
$\overleftrightarrow{BE}$ bisects $\overline{AD}$
$AB = AE$

Prove: $BC = DE$

(10)



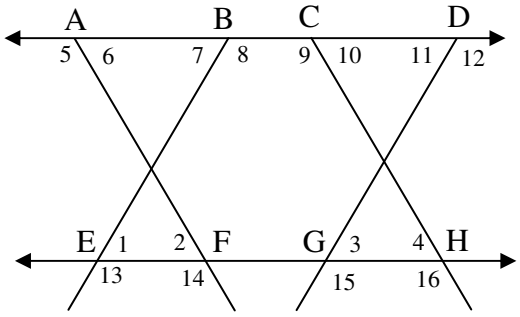
Given: $m\angle 1 = m\angle 3$
$m\angle 2 = m\angle 4$

Prove: $m\angle 5 = m\angle 6$

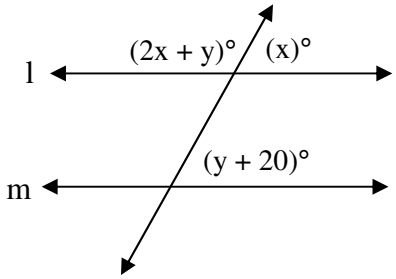
Ch 1-4 Review

(11) Refer to the figure to the right, name the lines which must be parallel (if any) given the following information. Consider each question separately.

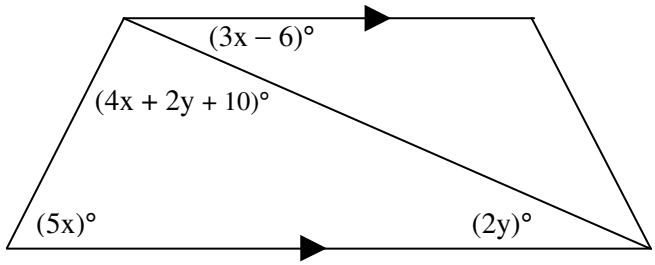
(a) $\angle 1 \cong \angle 7$
(b) $\angle 5 \cong \angle 14$
(c) $\angle 2 \cong \angle 4$
(d) $\angle 9 \cong \angle 16$
(e) $\angle 3 \cong \angle 1$
(f) $\angle 5 \cong \angle 9$
(g) $\angle 8 \cong \angle 13$
(h) $\angle 7 \cong \angle 2$
(i) $\angle 4 \cong \angle 10$
(j) $m\angle 3 + m\angle 12 = 180$



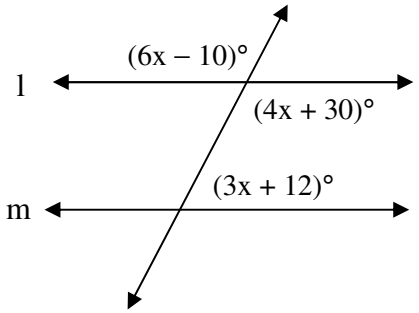
(12) Solve for x and y if $l \parallel m$



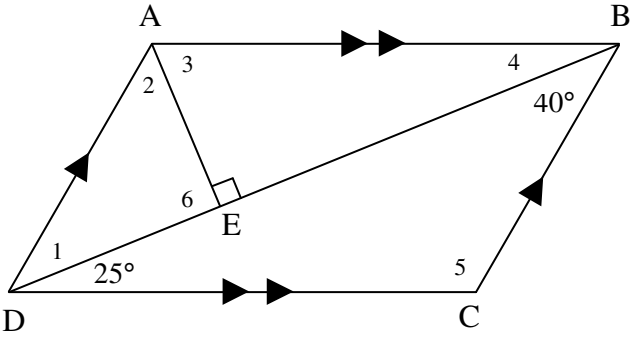
(13) Solve for x and y given the figure as marked



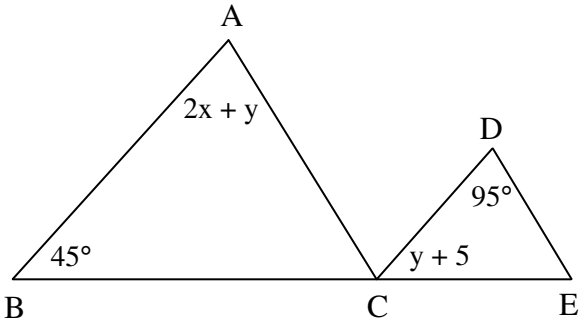
(14) Is $l \parallel m$? Support your answer.



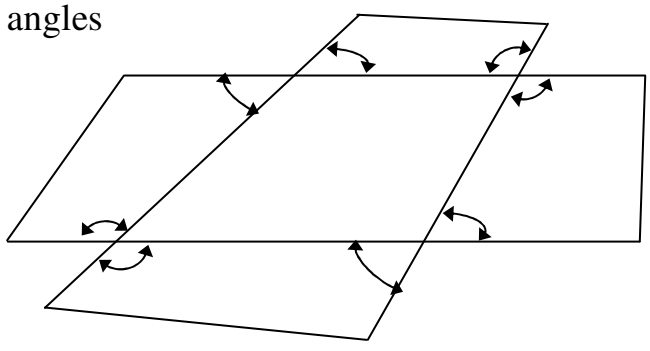
(15) Find the measures of all the numbered angles



(16) Solve for x and y if $\overline{AB} \parallel \overline{CD}$ and $\overline{AC} \parallel \overline{DE}$



(17) Find the sum of the measures of the marked angles

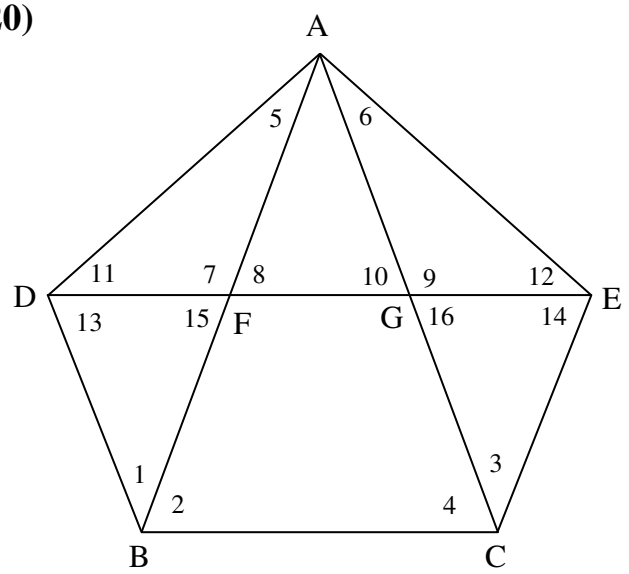


(18) Find the measure of each interior angle of a regular 15-gon.

(19) The measure of each exterior angle of a regular polygon is 18°. How many sides does it have?

Ch 1-4 Review

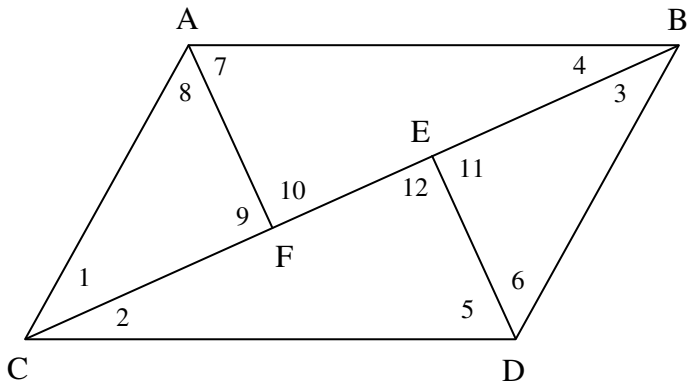
(20)



Given: DF = EG , $\angle 15 \cong \angle 16$, $\angle 2 \cong \angle 4$

Prove: BD = EC

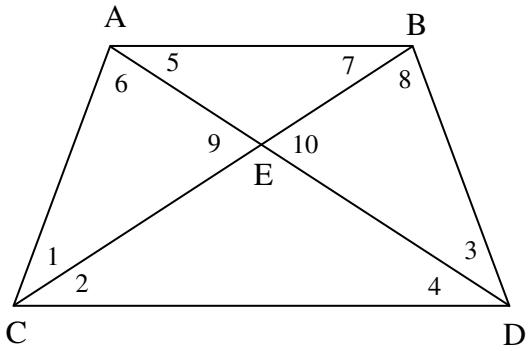
(21)



Given: $\overline{AF} \perp \overline{BC}$, $\overline{DE} \perp \overline{BC}$
AC = BD , AF = DE

Prove: AB = CD

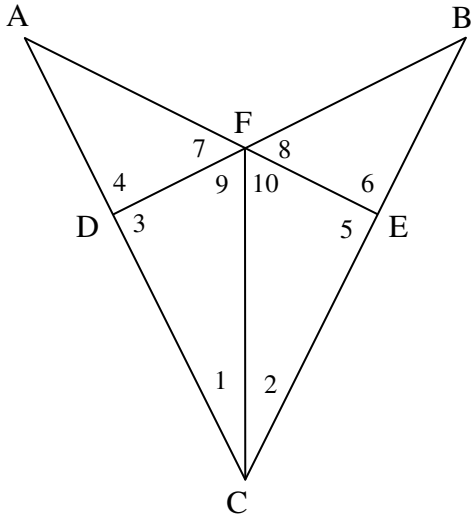
(22)



Given: $\angle 2 \cong \angle 4$, $\angle 5 \cong \angle 7$

Prove: $\angle$ ACD $\cong \angle$ BDC

(23)



Given: AD = BE , CD = CE

Prove: AF = BF