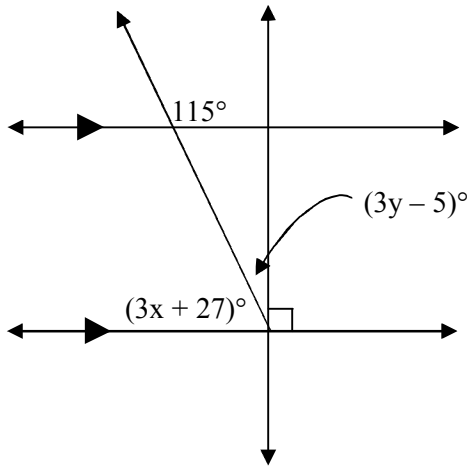
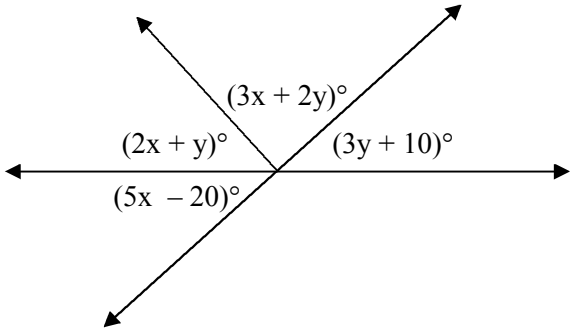
Geometry Mid-Term Review Sheet

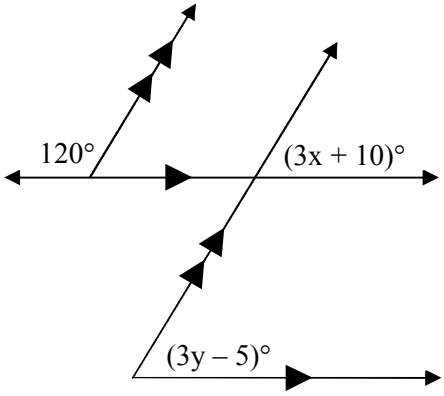
(1) Solve for x and y given the figure below.



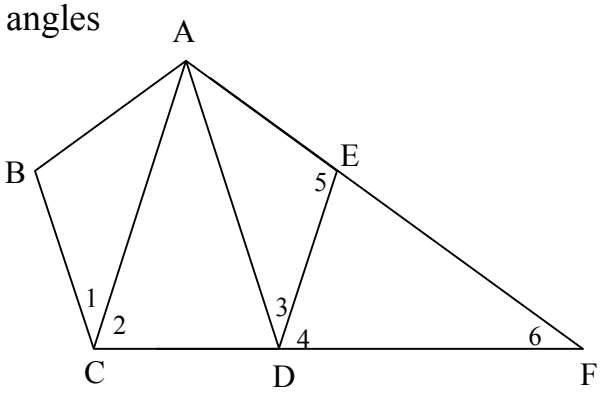
(2) Solve for x and y given the figure below.



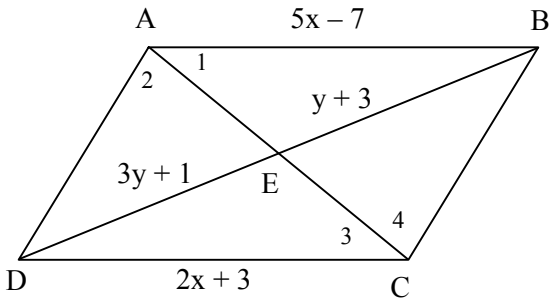
(3) Solve for x and y given the figure below.



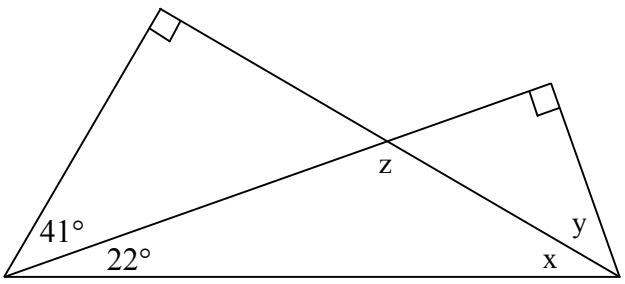
(4) ABCDE is a regular pentagon. Find the measures of each of the numbered angles



(5) Given the figure below, □ABCD is a parallelogram, m∠1 = 40°, m∠4 = 100°, find the values of x and y and the measure of ∠ADC.



(6) Find the values of x, y, and z in the figure below.



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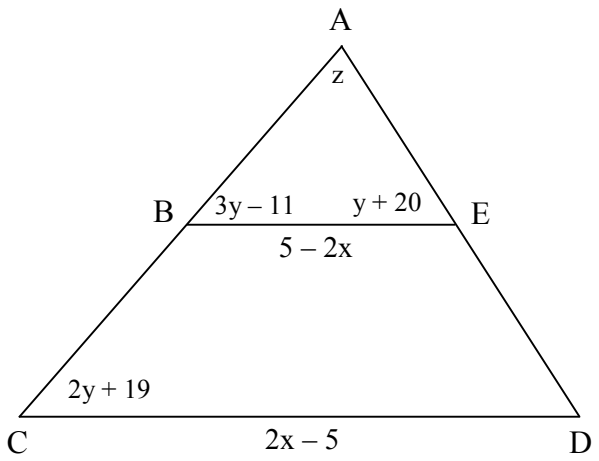
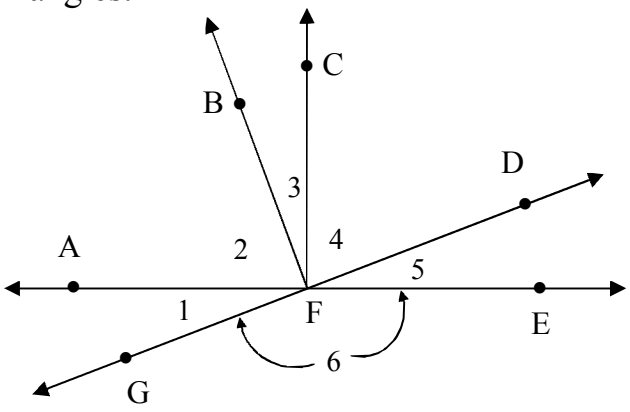
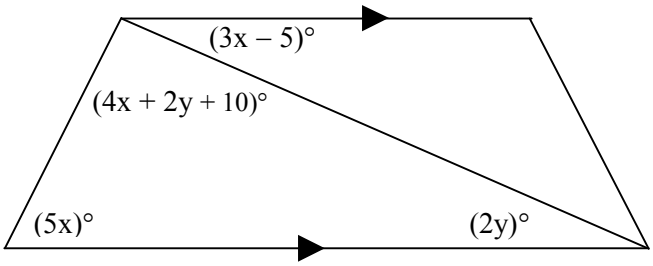
(7) Given the figure below, B and E are midpoints. Find the values of x, y, and z.



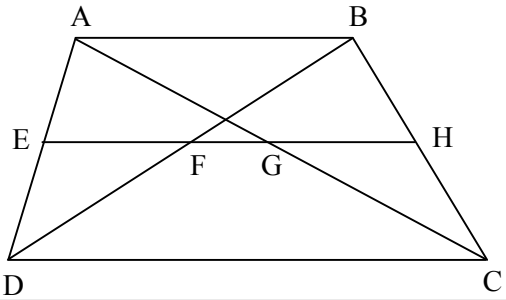
(8) Given the figure below, $\overleftrightarrow{AE} \perp \overline{CF}$, $m\angle 2 = 4\ m\angle 3$, $m\angle 5 = 30°$. Find the measures of the remaining numbered angles.



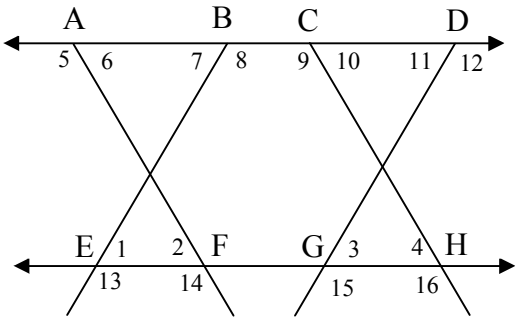
(9) Find the values of x and y in the figure below



(10) Given the figure below, $\overline{AB} \parallel \overline{EH} \parallel \overline{CD}$, AE = DE, AB = 12, FG = 3. Find EF, GH, CD.



(11) Use the given information to name the segments which MUST be parallel in the figure to the right. Consider each problem individually. If there are no such segments, write none.



(a) $\angle 6 \cong \angle 10$

(b) $\angle 7 \cong \angle 1$

(c) $\angle 12 \cong \angle 15$

(d) $\angle 8 \cong \angle 9$

(e) $\angle 6 \cong \angle 12$

(f) $\angle 8 \cong \angle 12$

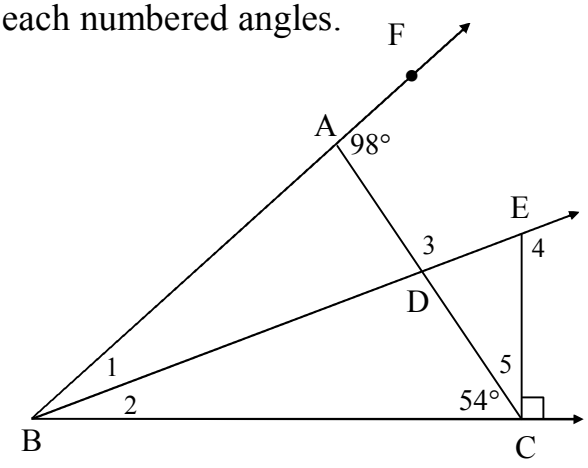
(g) $\angle 6 \cong \angle 7$

(h) $m\angle 6 + m\angle 9 = 180$

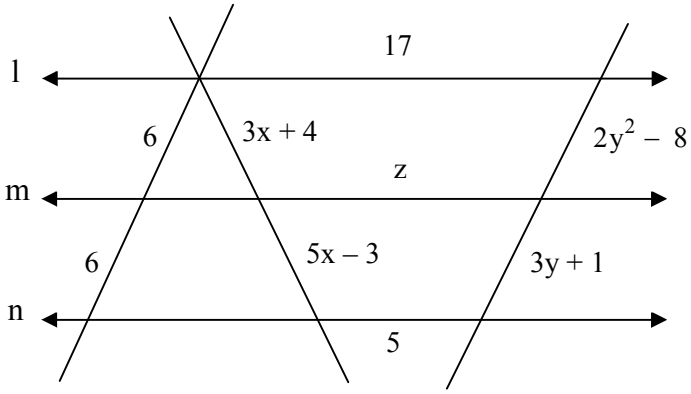
(12) Find the measure of each interior and exterior angle of a regular 15–gon.

Geometry Mid-Term Review Sheet

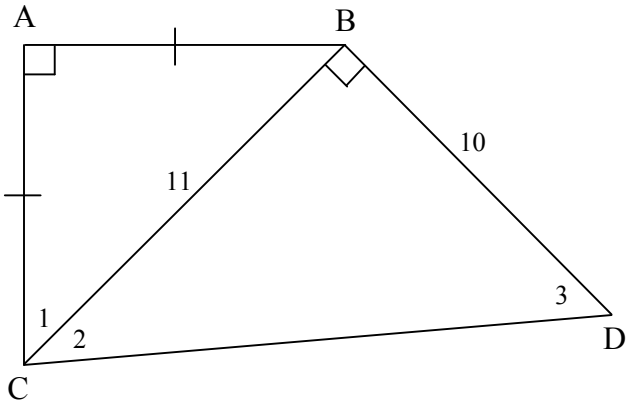
(13) Given the figure below, $m\angle 1 = m\angle 2$, and angles as marked, find the measure of each numbered angles.



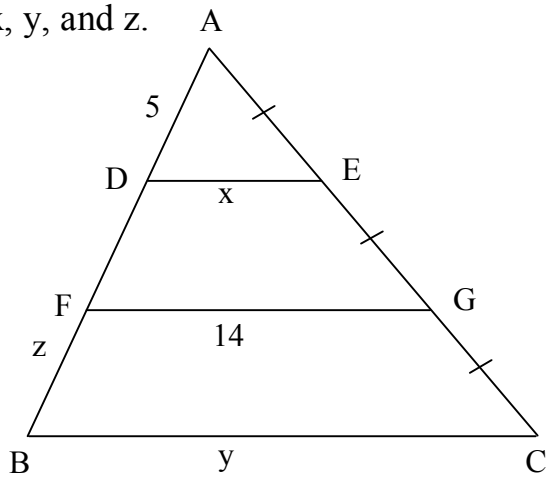
(14) Given the figure below, $l \parallel m \parallel n$, with sides as marked, find the values of x, y, and z



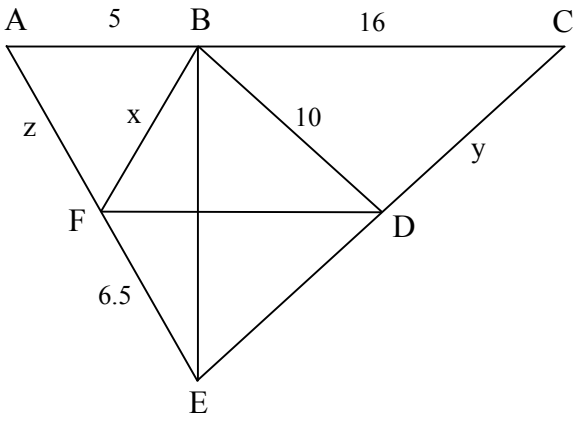
(15) Given the figure below with sides and angles as marked, use $m\angle 1$, $m\angle 2$, $m\angle 3$ to complete: _____<_____<_____



(16) Given the figure below, $\overline{DE} \parallel \overline{FG} \parallel \overline{BC}$, and sides as marked, find the values of x, y, and z.



(17) Given the figure to the right, $\overline{BE} \perp \overline{AC}$, $\overline{BF}$ and $\overline{BD}$ are medians. Find x, y, z, and DF.



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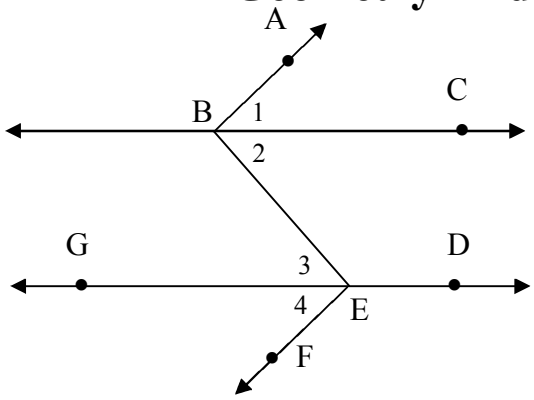
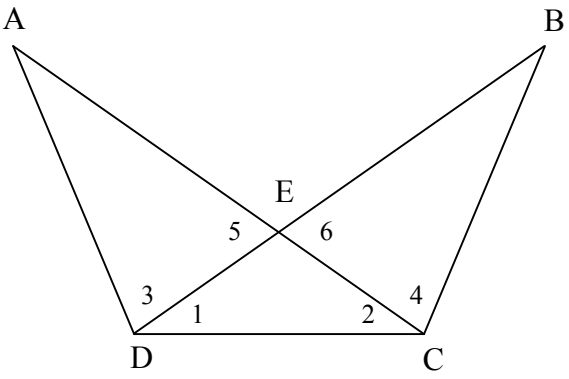
(18)



Given: $\angle 1 \cong \angle 4$, $\overrightarrow{BA} \parallel \overrightarrow{EF}$

Prove: $\overleftrightarrow{BC} \parallel \overleftrightarrow{DG}$

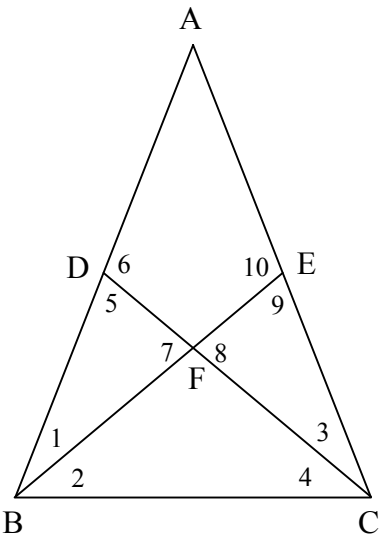
(19)



Given: AC = BD , AD = BC

Prove: AE = BE

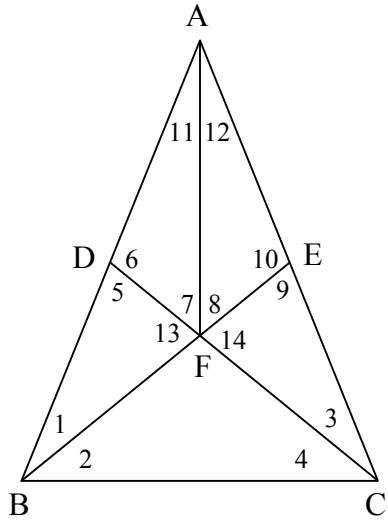
(20)



Given: AD = AE , BD = CE

Prove: DF = EF

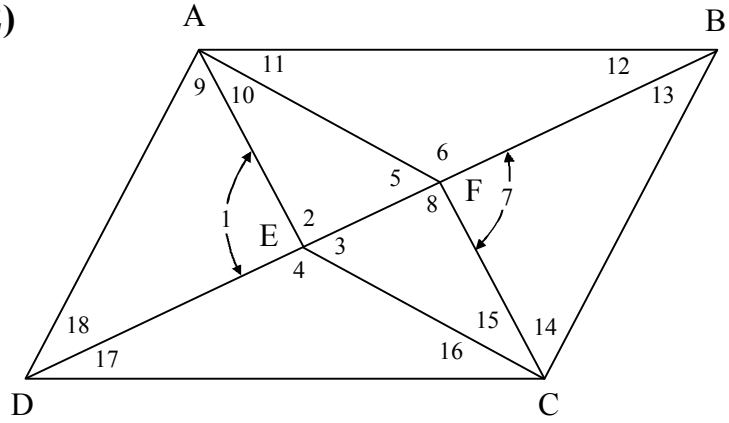
(21)



Given: $\angle 6 \cong \angle 10$, $\angle 2 \cong \angle 4$

Prove: $\angle 11 \cong \angle 12$

(22)

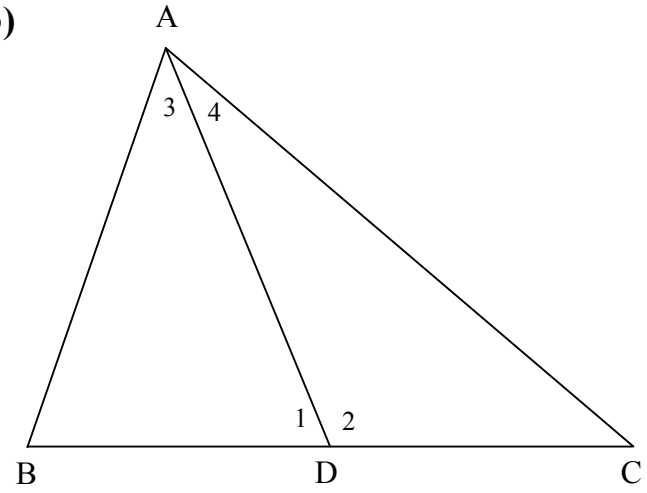


Given: □ABCD is a parallelogram
BF = DE

Prove: □AFCE is a parallelogram

Geometry Mid-Term Review Sheet

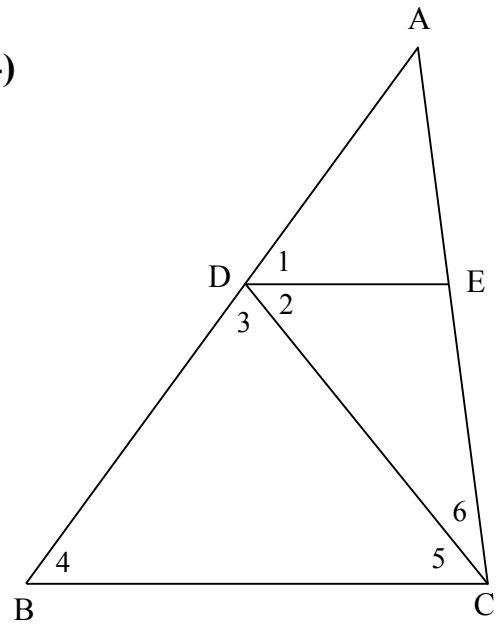
(23)



Given: $\overline{AD}$ is a median, $m\angle 2 > m\angle 1$

Prove: $m\angle B > m\angle C$

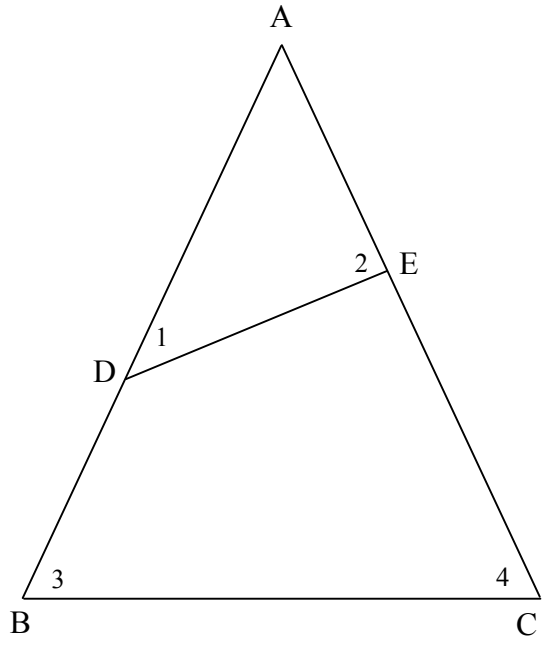
(24)



Given: $\overline{DE} \parallel \overline{BC}$, BD = CD

Prove: $\overrightarrow{DE}$ bisects $\angle ADC$

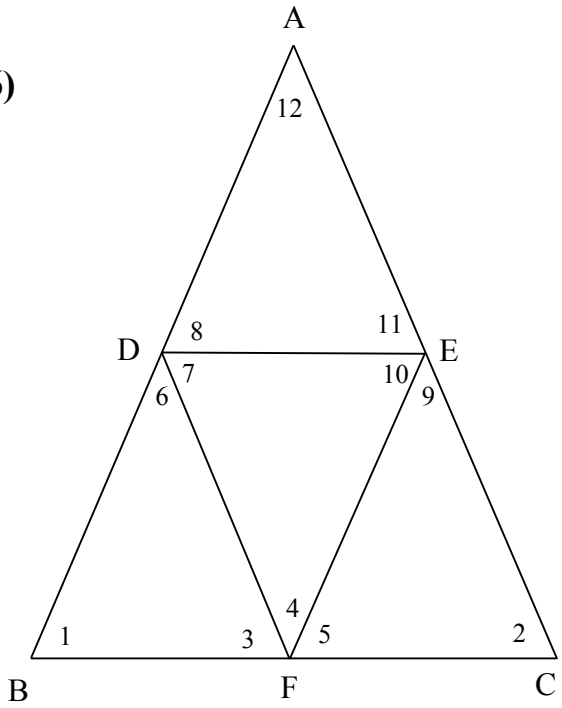
(25)



Given: AB = AC , AD ≠ AE

Prove: $\overline{DE} \not\parallel \overline{BC}$

(26)



Given: □BDEF and □DECF are parallelograms
BD = CE

Prove: ΔABC is isosceles

Geometry Mid-Term Review Sheet

Answers

(1) $x = \frac{38}{3}$, $y = 10$

(2) $x = \frac{46}{3}$, $y = \frac{140}{9}$

(3) $x = \frac{50}{3}$, $y = \frac{65}{3}$

(4) $m\angle 1 = 36^\circ$, $m\angle 2 = 72^\circ$
$m\angle 3 = 36^\circ$, $m\angle 4 = 72^\circ$
$m\angle 5 = 108^\circ$, $m\angle 6 = 36^\circ$

(5) $x = \frac{10}{3}$, $y = 1$, $m\angle ADC = 40^\circ$

(6) $x = 27^\circ$, $y = 41^\circ$, $z = 131^\circ$

Geometry Mid-Term Review Sheet

Answers

(7) $x = \frac{5}{2}$, $y = 30$, $z = 51$

(8) $m\angle 1 = 30^\circ$, $m\angle 2 = 72^\circ$
$m\angle 3 = 18^\circ$, $m\angle 4 = 60^\circ$
$m\angle 5 = 30^\circ$, $m\angle 6 = 150^\circ$

(9) $x = 12$, $y = \frac{31}{2}$

(10) $EF = 6$, $GH = 6$, $CD = 18$

(11) **(a)** $\overline{AF} \parallel \overline{CH}$

(b) $\overline{AD} \parallel \overline{EH}$

(c) $\overline{AD} \parallel \overline{EH}$

(d) none

(e) none

(f) $\overline{BE} \parallel \overline{DG}$

(g) none

(h) $\overline{AF} \parallel \overline{CH}$

(12) Each interior angle is 156° , each exterior angle is 24°

Geometry Mid-Term Review Sheet

Answers

(13) $m\angle 1 = 22^\circ$, $m\angle 2 = 22^\circ$
$m\angle 3 = 104^\circ$, $m\angle 4 = 112^\circ$
$m\angle 5 = 36^\circ$

(14) $x = \frac{7}{2}$, $y = 3$, $z = 11$

(15) $m\angle 3 > m\angle 1 > m\angle 2$

(16) $x = 7$, $y = 21$, $z = 5$

(17) $x = 6.5$, $y = 10$, $z = 6.5$, $DF = \frac{21}{2}$