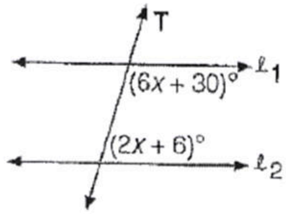
Name____ Review due: _______________

1. What is the value of x that makes $\ell_1 \parallel \ell_2$?



A) 18 B) -6 C) 12 D) 6

$6x+30+2x+6=180$

$8x+36=180$

$-36 \quad -36$

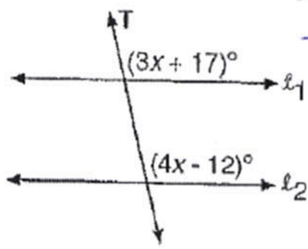
$8x=144$

$\frac{8x}{8} = \frac{144}{8}$

$\boxed{x=18}$

2. What is the value of x that makes $\ell_1 \parallel \ell_2$?

$3x+17=4x-12$



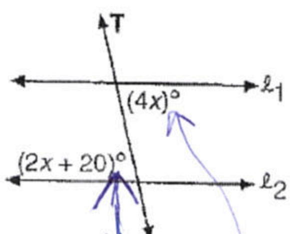
A) 5 B) 29 C) 26.4 D) 25

$3x+17=4x-12$

$-3x+12 \quad -3x+12$

$\boxed{29=x}$

3. What is the value of x that makes $\ell_1 \parallel \ell_2$?



A) 11.6 B) 10 C) 8 D) 26.6

$4x=2x+20$

$4x=2x+20$

$-2x \quad -2x$

$2x=20$

$\boxed{x=10}$

4. Two parallel lines are cut by a transversal. The measures of two alternate interior angles are represented by $4x$ and $2x + 20$. Find the value of x.

5. Two parallel lines are cut by a transversal. The measures of two interior angles on the same side of the transversal are represented by $3x - 12$ and $5x + 32$. Find the value of x.

are supplementary

$3x-12+5x+32=180$

$8x+20=180$

$-20 \quad -20$

$8x=160$

$\boxed{x=20}$

6. Two parallel lines are cut by a transversal. The measures of two corresponding angles are represented by $4x - 6$ and $2x + 12$. Find the value of x.

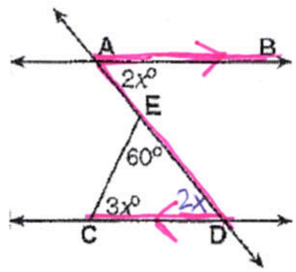
$4x-6=2x+12$

$-2x+6 \quad -2x+6$

$2x=18$

$\boxed{x=9}$

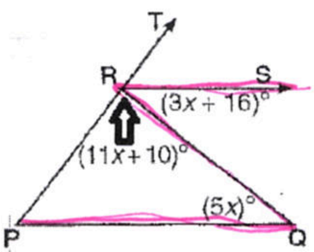
7. In the accompanying diagram, $\overline{AB}$ is parallel to $\overline{CD}$, $\overleftrightarrow{AED}$ is a transversal, and $\overline{CE}$ is drawn.



If m∠CED = 60°, m∠DAB = 2x°, and m∠DCE = 3x°, find x.

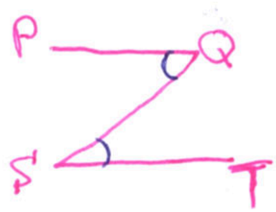
$$60 + 3x + 2x = 180$$
$$-60 \qquad\qquad -60$$
$$\frac{5x}{5} = \frac{120}{5}$$
$$\boxed{x = 24}$$

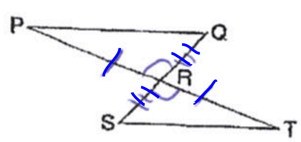
8. In the figure below, $\overline{RS} \parallel \overline{PQ}$.



$$3x + 16 = 5x$$
$$-3x \qquad\qquad -3x$$
$$\frac{16}{2} = \frac{2x}{2}$$
$$\boxed{x = 8}$$

9. Find the m∠PRQ. $= 11(8) + 10 = 98$



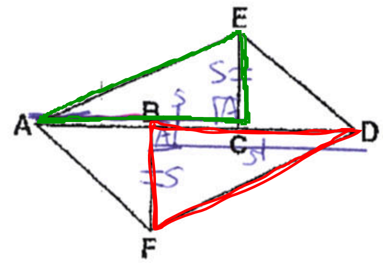


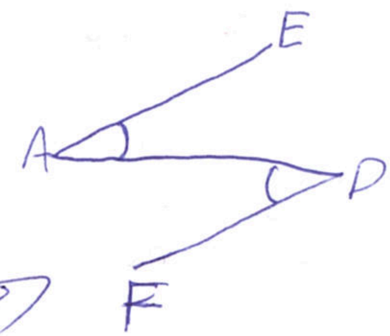
Given: $\overline{PT}$ and $\overline{QS}$ bisect each other

Prove: $\overline{PQ} \parallel \overline{ST}$

	S	R
S	1. PT and QS bisect each other	1. Given
	2. PR ≅ RT	2. bisector cuts segment into 2 ≅ halves
A	3. PT and SQ intersect at R	3. Given
	4. ∠PRQ ≅ ∠SRT	4. intersecting lines create ≅ vertical ∠s
S	5. SR ≅ RQ	5. step 2
	6. △PRQ ≅ △SRT	6. SAS ≅ SAS
	7. ∠PQR ≅ ∠RST	7. CPCTC
	8. PQ // ST	8. alt int ∠s create // lines

(10)





Given: $\overline{EC} \perp \overline{AD}$

$\overline{FB} \perp \overline{AD}$

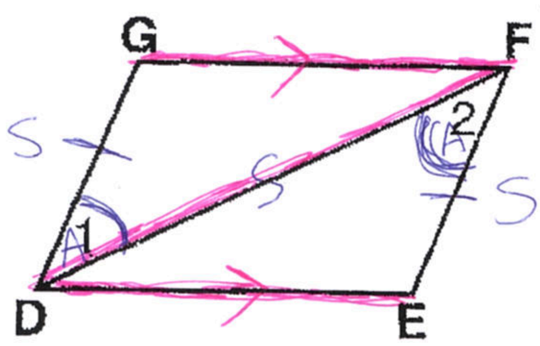
$BF \cong CE$

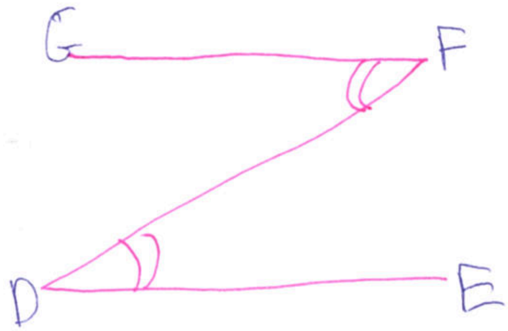
$AC \cong BD$

Prove: $\overline{AE} \parallel \overline{FD}$

S	R
S (1) $AC \cong BD$	(1) Given
A (2) $EC \perp AD$, $FB \perp AD$	(2) Given
(3) $\angle ACE$ and $\angle DBF$ are Rt $\angle$s	(3) $\perp$ lines form Rt $\angle$s
(4) $\angle ACE \cong \angle DBF$	(4) All Rt $\angle$s $\cong$
S (5) $BF \cong CE$	(5) Given
(6) $\triangle ACE \cong \triangle BFD$	(6) SAS $\cong$ SAS
(7) $\angle EAC \cong \angle BDF$	(7) CPCTC
(8) $AE \parallel FD$	(8) alt int $\angle$s form $\parallel$ lines

11.



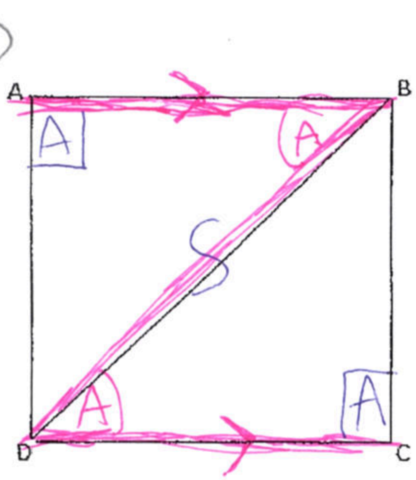


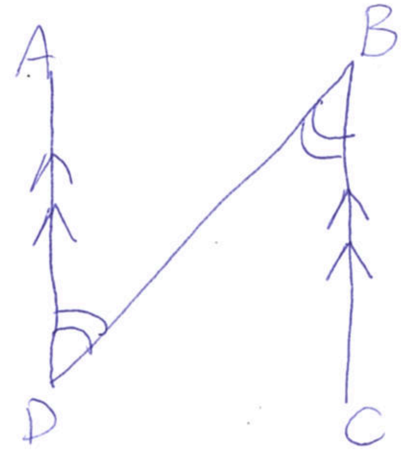
Given: $<1 \cong <2$
$\overline{DG} \cong \overline{FE}$

Prove: $GF \parallel DE$

S	R
S [1. $DG \cong FE$	1. Given
A [2. $\angle 1 \cong \angle 2$	2. Given
S [3. $DF \cong DF$	3. Reflexive
4. $\triangle DGF \cong \triangle DFE$	4. SAS $\cong$ SAS
* 5. $\angle GFD \cong \angle FDE$	5. CPCTC
6. $GF \parallel DE$	6. alt int $\angle$s create $\parallel$ lines

12.





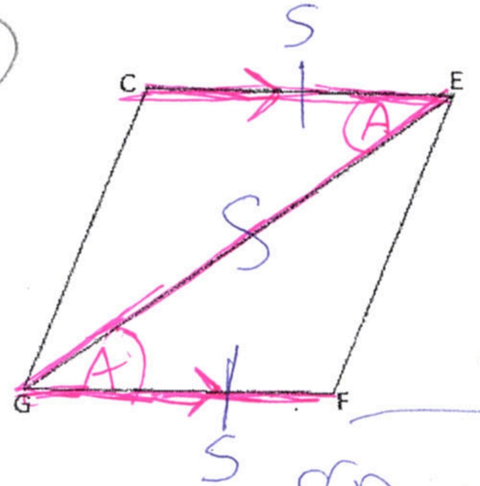
CPCTC's

Given: $AB \parallel DC$
$AD \perp AB$
$CD \perp BC$

Prove: $AD \parallel BC$

	S	R
A	1. $AD \perp AB$, $CD \perp BC$	1. Given
	2. $\angle BAD$ and $\angle BCD$ are Rt $\angle$'s	2. $\perp$ lines form Rt $\angle$s
	3. $\angle BAD \cong \angle BCD$	3. all Rt $\angle$s $\cong$
A	4. $AB \parallel DC$	4. Given
	5. $\angle ABD \cong \angle BDC$	5. $\parallel$ lines form $\cong$ alt int $\angle$'s
S	6. $BD \cong BD$	6. Reflexive
	7. $\triangle ABD \cong \triangle BCD$	7. AAS $\cong$ AAS
*	8. $\angle ADB \cong \angle DBC$	8. CPCTC
	9. $AD \parallel BC$	9. alt int $\angle$'s form $\parallel$ lines

15.

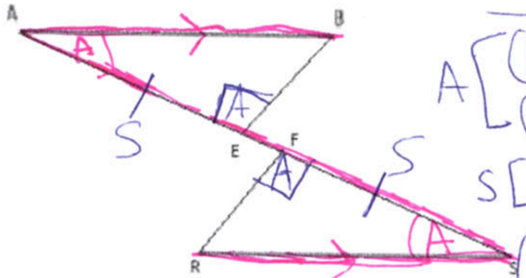


Given: CE // GF
$\overline{CE} \cong \overline{GF}$

Prove: $\overline{GC} \cong \overline{FE}$

	S	R
S	1. $CE \cong GF$	1. Given
A	2. $CE \parallel GF$	2. Given
	3. $\angle CEG \cong \angle EGF$	3. // lines for $\cong$ alt int $\angle$'s
S	4. $GE \cong GE$	4. Reflexive
	5. $\triangle GCE \cong \triangle GEF$	5. SAS $\cong$ SAS
	6. $\overline{GC} \cong \overline{FE}$	6. CPCTC

16.

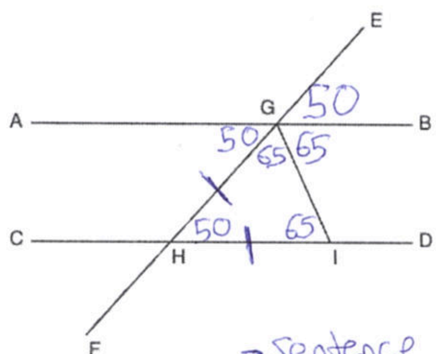


Given: AB // RS
$BE \perp AF$
$RF \perp ES$
$\overline{AE} \cong \overline{FS}$

Prove: $\angle B \cong \angle R$

S	R
A [1. AB//RS	1. Given
2. ∠BAE ≅ ∠FSR	2. // lines for ≅ alt int ∠s
S [3. AE ≅ FS	3. Given
A [4. BE⊥AF, RF⊥ES	4. Given
5. ∠BEA and ∠SFR are Rt ∠s	5. ⊥ lines form Rt ∠s
6. ∠BEA ≅ ∠SFR	6. all Rt ∠s ≅
7. △BAE ≅ △SFR	7. ASA ≅ ASA
8. ∠B ≅ ∠R	8. CPCTC

17. In the diagram below, $\overline{EF}$ intersects $\overline{AB}$ and $\overline{CD}$ at G and H, respectively, and $\overline{GI}$ is drawn such that $\overline{GH} \cong \overline{IH}$.



If $m\angle EGB = 50°$ and $m\angle DIG = 115°$, explain why $\overline{AB} \parallel \overline{CD}$. sentence

$50 + x + x = 180$

$2x = 130$

$x = 65$

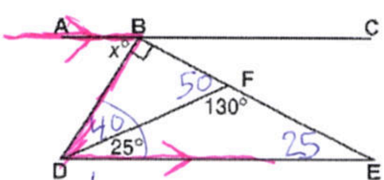
Since the alt int ∠s are ≅, the // lines are formed

18. In the accompanying diagram, $\overline{ABC} \parallel \overline{DE}$, $m\angle FDE = 25°$, $m\angle DFE = 130°$, and $m\angle ABD = x°$.

$90 + 50 + m = 180$

$140 + m = 180$

$m = 40$



$25 + 130 + y = 180$

$155 + y = 180$

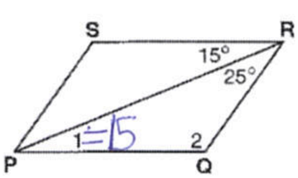
$-155 \quad -155$

$y = 25$

What is the value of x?

$\boxed{40 + 25 = x}$

19. If $\overline{PQ} \parallel \overline{SR}$ and $\overline{PS} \parallel \overline{QR}$, find $m\angle 1$ and $m\angle 2$.



$25 + 15 + \angle 2 = 180$

$40 + x = 180$

$\boxed{\angle 2 = 140}$