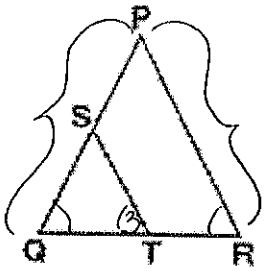
Name: Key Date: _____

Mixed Proofs Ditto

1.

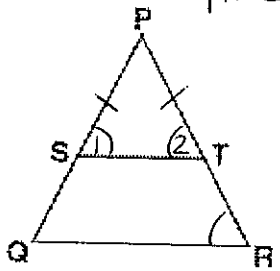


Given: $\overline{PQ} = \overline{PR}$
$\overline{ST} \parallel \overline{PR}$

Prove: $SQ = ST$

S	R
① $PQ = PR$	① Given
② $\angle Q \cong \angle R$	② In a $\triangle$ if 2 sides are $\cong$ then the $\angle$s opposite them are $\cong$
③ $ST \parallel PR$	③ Given
④ $\angle 3 \cong \angle R$	④ If 2 $\parallel$ lines are cut by a transversal then the corresponding $\angle$s are $\cong$
⑤ $\angle Q \cong \angle 3$	⑤ Transitive
⑥ $SQ \cong ST$	⑥ In a $\triangle$ if 2 $\angle$s are $\cong$ then the sides opposite them are $\cong$

2)



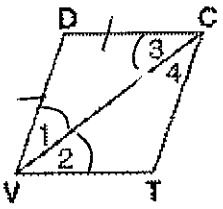
Given: $\overline{PS} \cong \overline{PT}$
$\angle PST \cong \angle R$

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

* $\angle 1$ is $\angle PST$

S	R
① $PS \cong PT$	① Given
② $\angle 1 \cong \angle 2$	② In a $\triangle$ if 2 sides are $\cong$ then the $\angle$s opposite them are $\cong$
③ $\angle PST \cong \angle R$	③ Given
④ $\angle 2 \cong \angle R$	④ Transitive
⑤ $ST \parallel QR$	⑤ If corresponding $\angle$s are $\cong$ then the 2 lines cut by a transversal are $\parallel$

3)

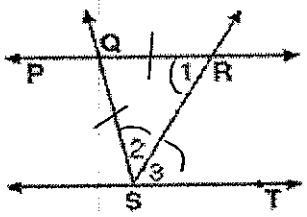


Given: $\overline{VC}$ bisects $\angle DVT$
$DV = DC$

Prove: $\overline{CD} \parallel \overline{VT}$

S	R
①VC bisects $\angle DVT$	①Given
②$\angle 1 \cong \angle 2$	②An $\angle$ bisector divides an $\angle$ into 2 $\cong \angle$s
③DV = DC	③Given
④$\angle 1 \cong \angle 3$	④In a $\triangle$ if 2 sides are $\cong$ then the $\angle$s opposite them are $\cong$
⑤$\angle 2 \cong \angle 3$	⑤Transitive
⑥CD ∥ VT	⑥If alternate interior $\angle$s are $\cong$ then the 2 lines cut by the transversal are ∥

4.

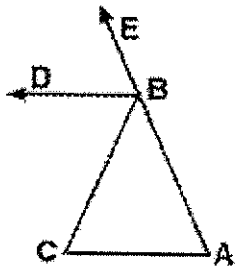


Given: $\overline{SR}$ bisects $\angle QST$
$\overline{QS} \cong \overline{QR}$

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

S	R
①SR bisects $\angle QST$	①Given
②$\angle 2 \cong \angle 3$	②An $\angle$ bisector divides an $\angle$ into 2 $\cong \angle$s
③QS ≅ QR	③Given
④$\angle 1 \cong \angle 2$	④In a $\triangle$ if 2 sides are $\cong$ then the $\angle$s opposite them are $\cong$
⑤$\angle 1 \cong \angle 3$	⑤Transitive
⑥PR ∥ ST	⑥If alternate interior $\angle$s are $\cong$ then the 2 lines cut by the transversal are ∥

5. same problem as #3
on Given Parallel Lines Packet

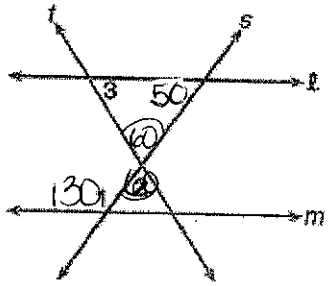


Given: $\overline{BD}$ bisects $\angle CBE$
$\overline{BD} \parallel \overline{AC}$

Prove: $\overline{BC} \cong \overline{BA}$

6.

In the accompanying diagram, $\ell \parallel m$, t and s are intersecting transversals, $m\angle 1 = 130°$, and $m\angle 2 = 60°$.

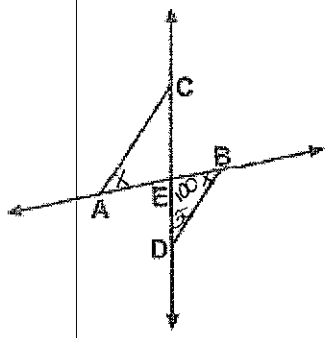


Find $m\angle 3$.

$X + 50 + 60 = 180$
$X + 110 = 180$
$-110 \quad -110$
$X = 70$

7.

As shown in the accompanying diagram, $\overline{AB}$ and $\overline{CD}$ intersect at point E, and $\overline{CA}$ and $\overline{BD}$ are drawn.



If $\overline{CA} \parallel \overline{BD}$, $m\angle DEB = 100°$, and $m\angle BDE = 30°$, find $m\angle CAE$.

$100 + 30 + X = 180$

$130 + X = 180$

$-130 \quad -130$

$X = 50$

8.

In the accompanying diagram, $\overline{AB}$ is parallel to $\overline{CD}$, and $\overline{EF}$ is a transversal.

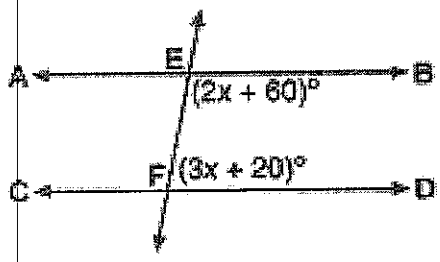
$2X + 60 + 3X + 20 = 180$

$5X + 80 = 180$

$-80 \quad -80$

$\frac{5X}{5} = \frac{100}{5}$

$X = 20$



If $m\angle BEF = (2x + 60)°$ and $m\angle DFE = (3x + 20)°$, what is $m\angle BEF$?

A) 20° B) 40° ● 100° D) 140°

$2(20) + 60$

$40 + 60$

100