Sec 3.4.

Prob 2: 
Proof: By contradiction,  
If $l_1$ intersects $l_2$ at $R$  
then $\angle 1 > \angle 2$.

Prob 3. 
Proof: 
from $A \in l$, draw perpendicular line to $l_l$, $l_2$.

Prob 11: 
Proof: 
from $A$, draw a line parallel to $BC$,  
then $\angle ABC = \angle 1$, $\angle ACB = \angle 2$  
$\Rightarrow m\angle A + m\angle B + m\angle C = \angle 1 + \angle BAC + \angle 2 = 180^\circ$

Sec 3.5.

Prob 1. 
Proof: Just by cutting this quadrilateral to two triangles. 
Then use Th. 3.5.1.
Prob 2:

Proof: 
\[\angle 1 + \angle BAC = 180^\circ\]
\[\angle ABC + \angle ACB + \angle BAC \leq 180^\circ\]
\[\implies \angle 1 \geq \angle ABC + \angle ACB.\]

Sec 3.6.

Prob 2:

Proof: 
\[\delta DAB = \delta CBA = 90^\circ\]
\[\implies \triangle DAB \cong \triangle CBA.\] (SAS)
\[\therefore BD = AC.\]

Prob 3:

Proof: Figure as previous problem (prob 2).
\[\delta \triangle ACD \cong \delta \triangle BCD \implies \angle ADC = \angle BCD\]
\[\text{AC = BD (prob 2)}\]

Prob 7:

Proof: 
By contradiction,
If \(AD > BC\), then \(\angle DBA > \angle CAB\)
\[\implies \angle DAC > \angle DBC\]
Since \(\angle D = \angle C\), (\(CD = CD\))
\[\therefore \text{from } \angle DAC > \angle DBC \implies AD < BC!\]