

### 7.3 HW Key

- 1)  $122^\circ$
- 2)  $90^\circ$
- 3) 22
- 4)  $115^\circ$
- 5)  $80^\circ$
- 6)  $180^\circ$
- 7) 1
- 8) 10
- 9) 4
- 10) 9
- 11) 4
- 12) 6
- 13)  $\overline{PQ} \not\cong \overline{RS}$  are equidistant from the center of the circle so they are  $\cong$  by the theorem "in the same circle or in  $\cong$  circles, 2 chords are  $\cong$  iff they are equidistant from the center". Since they are  $\cong$ , they must have the same length.
- 14)
  - 1) given
  - 2)  $\angle AED \cong \angle AEB$
  - 3) diam  $\odot \perp$  to chord  $\rightarrow$  diam bis. chord  $\hat{\square}$  arc
  - 4) reflex prop
  - 5) SAS  $\cong$
  - 6)  $\overarc{AO} \cong \overarc{AB}$
  - 7) In  $\cong$   $\odot$ 's, 2 min arcs  $\cong$  iff corr chords  $\cong$ .

15) 1) Given

2)  $\overline{PT} \cong \overline{QS}$

3) def of radius

4) SSS  $\cong$

YON WH E.F.

$\triangle PQT \cong \triangle QSP$

S.S. (E)

Q.H. (P)

Q.R. (P)

$\triangle QSP \cong \triangle QRS$

S.S. (E)

Q.R. (P)

P (P)

P (S)

P (H)

S (S)

Since both triangles have 2 sides & their included angle are equal, therefore by S.S.I. (E)

Both triangles  $\triangle PQT \cong \triangle QSP$  by S.S.I. (E)

Therefore  $\angle P \cong \angle Q$  and  $\angle T \cong \angle S$  (corresponding angles)

Since  $\angle P \cong \angle Q$  and  $\angle T \cong \angle S$  therefore  $\angle P + \angle T \cong \angle Q + \angle S$  (angle sum property)

Therefore  $\angle P + \angle T = 180^\circ$

$\angle P + \angle T = 180^\circ$  (H)

$\angle P + \angle T = 180^\circ$  (S)

Since  $\angle P + \angle T = 180^\circ$  and  $\angle P + \angle T = 180^\circ$  therefore  $\angle P + \angle T = 180^\circ$

$\angle P + \angle T = 180^\circ$  (P)

$\angle P + \angle T = 180^\circ$  (P)

$\overline{PA} \cong \overline{QA}$  (S)

Since  $\overline{PA} \cong \overline{QA}$  and  $\angle P + \angle T = 180^\circ$  therefore  $\triangle PAQ \cong \triangle QAQ$  (S.A.S.)