Congruence and Similarity

Solution

3. Since $\Delta PQS \cong \Delta RSQ$,
we have $\angle P = \angle R$,

i.e. $x = 90^\circ$
and $PQ = RS$

i.e. $y = 6$ cm
and $PS = RQ$

i.e. $z = 8$ cm

4. $\angle PRQ = \angle PRS = 90^\circ$
$PQ = PS = 10$
$PR = PR$

$\therefore\ \Delta PQR \cong \Delta PSR$ (RHS)

5. (a) $\angle EFD = 180^\circ - 80^\circ - 55^\circ$
$= 45^\circ$
$\angle BAC = \angle EFD = 45^\circ$
$\angle BCA = \angle EDF = 55^\circ$
$AC = FD$

$\therefore\ \Delta ABC \cong \Delta FED$ (ASA)

(b) $p = 7$
$FE = AB$
$p + q = 9$
$q = 2$ cm