

17

Because $\vec{BA} \perp \vec{BC}$, $\angle ABC$ is
a right angle and $m\angle ABC = \underline{90^\circ}$.

According to the Angle Addition Postulate,
 $m\angle 3 + m\angle 4 = m\angle ABC$. So by the substitution
property of equality, $\underline{m\angle 3} + \underline{m\angle 4} = \underline{90^\circ}$. By
definition, $\angle 3$ and $\angle 4$ are complementary.

18

$\angle 1, \angle 2$
are linear pair
Given

$\angle 1, \angle 2$ are
supp.
Linear pair Post.

$m\angle 1 + m\angle 2 = 180^\circ$
b def. suppl's.

$j \perp k$
Given

$\angle 1$ is rt \angle
Def \perp lines

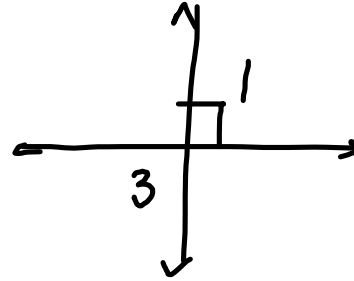
$m\angle 1 = 90^\circ$
c def of rt \angle

$90^\circ + m\angle 2 = 180^\circ$
d sub

$m\angle 2 = 90^\circ$
subtract e) def of rt \angle .

$\angle 2$ is
rt \angle

19 Given $\angle 1$ is rt \angle
 Prove: $\angle 3$ is rt \angle .



Statements	Reasons
1. $\angle 1, \angle 3$ are vert \angle 's	1. Def vert \angle 's
2. $\angle 1 \cong \angle 3$	2. vert \angle 's Th.
3. $m\angle 1 = m\angle 3$	3. Def \cong \angle 's
4. $\angle 1$ is rt \angle	4. Given
5. $m\angle 1 = 90^\circ$	5. Def rt \angle .
6. $90^\circ = m\angle 3$	6. Sub.
7. $\angle 3$ is rt \angle .	7. Def rt \angle .

(24)

Statements	Reasons
1. $\overline{AB} \perp \overline{BC}$	1. Given
2. $\overline{BC} \perp \overline{CD}$	2. Given
3. $\angle 7$ is rt \angle $\angle 8$ is rt \angle	3. Def + lines
4. $\angle 7 \cong \angle 8$	4. all rt \angle 's \cong