

$$\textcircled{7} \quad \begin{aligned} x &= 60 \\ y &= 61 \end{aligned}$$

$$\textcircled{8} \quad \begin{aligned} 14x + 4x &= 180 \\ 18x &= 180 \\ x &= 10 \\ 2y &= 90 \\ y &= 45 \end{aligned}$$

$$\textcircled{9} \quad \begin{aligned} x &= 60 \\ 3y + 6 &= 60 \\ y &= 18 \end{aligned}$$

$$\textcircled{14} \quad \begin{aligned} x &= 56 \\ y &= 100 \\ 4z &= 100 \\ z &= 25 \end{aligned}$$

$$\textcircled{15} \quad \begin{aligned} x &= 70 \\ 5y + 10 &= 70 \\ y &= 12 \\ z &= 38 \end{aligned}$$

$$\textcircled{16} \quad \begin{aligned} 3x &= 90 \\ x &= 30 \\ 8y + 4 &= 68 \\ y &= 8 \\ z &= 11 \end{aligned}$$

$$\textcircled{10} \quad \begin{aligned} x &= 70 \\ y &= 60 \end{aligned}$$

$$\textcircled{11} \quad \begin{aligned} 3x &= 42 \\ x &= 14 \\ 6y - 6 &= 48 \\ y &= 9 \end{aligned}$$

$$\textcircled{12} \quad \begin{aligned} x &= 55 \\ y &= 75 \end{aligned}$$

$$\textcircled{17} \text{ a) } \begin{aligned} m \angle DAB &= 64 \\ m \angle KAB &= 32 \\ m \angle DKA &= 32 \end{aligned}$$

b) Not enough

$$\textcircled{18} \quad \begin{aligned} 120 + 2x + y &= 180 \\ 2x - y + 140 &= 180 \\ x &= 25 \\ y &= 10 \end{aligned}$$

$$\textcircled{19} \quad \begin{aligned} 4x - 2y + 70 &= 180 \\ 4x + 2y + 50 &= 180 \\ x &= 30 \\ y &= 5 \end{aligned}$$

# Section 3-2 HW PROOFS

$$\textcircled{20} \left. \begin{array}{l} \textcircled{1} k \parallel l \rightarrow \textcircled{2} \angle 5 \cong \angle 7 \\ \textcircled{3} \angle 2 \cong \angle 5 \end{array} \right\} \rightarrow \textcircled{4} \angle 2 \cong \angle 7$$

- ① Given
- ② 2  $\parallel$  lines trans.  $\rightarrow$  corresp.  $\angle$ s  $\cong$
- ③ Vertical  $\angle$ s  $\cong$
- ④ Transitive Property

② Multiple ways to do this proof.

$$\textcircled{1} k \parallel l \rightarrow \textcircled{2} \angle 1 \cong \angle 8 \rightarrow \textcircled{3} m\angle 1 = m\angle 8$$

$$\textcircled{4} \angle 7 \text{ \& } \angle 8 \text{ linear pair} \rightarrow \textcircled{5} \angle 7 \text{ supp } \angle 8 \rightarrow \textcircled{6} m\angle 7 + m\angle 8 = 180$$

$$\textcircled{7} m\angle 1 + m\angle 7 = 180 \rightarrow \textcircled{8} \angle 1 \text{ supp } \angle 7$$

- ① Given
- ② 2  $\parallel$  lines transversal,  $\therefore$  alt. int.  $\angle$ s  $\cong$
- ③ Def  $\cong \angle$ s
- ④ Def linear pair
- ⑤ Linear pair postulate
- ⑥ Supplem  $\angle$ s total 180

$$\textcircled{24} \left. \begin{array}{l} \textcircled{1} m\angle 4 = m\angle 5 \rightarrow \textcircled{2} \angle 4 \cong \angle 5 \\ \textcircled{3} \overline{AS} \parallel \overline{BT} \rightarrow \textcircled{4} \angle 4 \cong \angle 1 \end{array} \right\} \rightarrow \textcircled{5} \angle 1 \cong \angle 5$$

$$\left. \begin{array}{l} \textcircled{5} \angle 1 \cong \angle 5 \\ \textcircled{6} \angle 5 \cong \angle 2 \end{array} \right\} \rightarrow \textcircled{7} \angle 1 \cong \angle 2$$

- ① Given
- ② Def. of  $\cong \angle$ s
- ③ Given
- ④ 2  $\parallel$  lines trans.,  $\therefore$  corresp.  $\angle$ s  $\cong$
- ⑤ Transitive Prop
- ⑥ 2  $\parallel$  lines trans.,  $\therefore$  alt. int.  $\angle$ s  $\cong$
- ⑦  $\overline{SA} \rightarrow$  bisects  $\angle BSR$

- ⑦ Transitive Prop
- ⑧ Def of  $\angle$  bisector
- ⑨  $m\angle 1 = 60$