

Worksheet 2-6 Proofs #1 Key

1) Statements	Reasons
1) $\angle 3 \cong \angle 5$	1) Given
2) $\angle 5 \cong \angle 2$	2) Vertical \angle 's are \cong
3) $\angle 3 \cong \angle 2$	3) Trans Prop of \cong
4) $\angle 3 \cong \angle 6$	4) Vertical \angle 's are \cong
5) $\angle 2 \cong \angle 6$	5) Trans Prop of \cong

2) Statements	Reasons
1) $\angle 3 \cong \angle 5$	1) Given
2) $\angle 7 \cong \angle 9$	2) Given
3) $\angle 3 \cong \angle 1$	3) Vertical \angle 's are \cong
4) $\angle 5 \cong \angle 7$	4) Vertical \angle 's are \cong
5) $\angle 9 \cong \angle 11$	5) Vertical \angle 's are \cong
6) $\angle 1 \cong \angle 11$	6) Trans. Prop of \cong

3) Statements	Reasons
1) \overline{AE} bisects $\angle DAB$	1) Given
2) $\angle 2 \cong \angle 3$	2) Given
3) $\angle 3 \cong \angle 4$	3) def. of \angle bisector
4) $\angle 2 \cong \angle 4$	4) Trans prop of \cong
5) $\angle 2 \cong \angle 1$	5) Vertical \angle 's are \cong
6) $\angle 1 \cong \angle 4$	6) Trans. prop of \cong

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4) Statements	Reasons
1) \overline{BD} bisects $\triangle ABC$	1) Given
2) $\triangle 2 \cong \triangle 3$	2) Given
3) $\triangle 3 \cong \triangle 4$	3) Vertical \triangle 's are \cong
4) $\triangle 2 \cong \triangle 4$	4) Trans. Prop of \cong
5) $\triangle 1 \cong \triangle 2$	5) def. of \triangle bisector
6) $\triangle 1 \cong \triangle 4$	6) Trans prop. of \cong

5) Statements	Reasons
1) \overline{BE} bisects $\triangle ABC$ \overline{CE} bisects $\triangle DCB$ $\triangle 6 \cong \triangle 1$ $\triangle 2 \cong \triangle 3$	1) Given
2) $\triangle 6 \cong \triangle 5$	2) def. of \triangle bisector
3) $\triangle 3 \cong \triangle 4$	3) def. of \triangle bisector
4) $\triangle 1 \cong \triangle 2$	4) vertical \triangle 's are \cong
5) $\triangle 5 \cong \triangle 4$	5) Trans. Prop of \cong

6) Statements	Reasons
1) $\triangle 2 \cong \triangle 3$	1) Given
2) $\triangle 2 \cong \triangle 1$	2) vertical \triangle 's are \cong
3) $\triangle 3 \cong \triangle 4$	3) vertical \triangle 's are \cong
4) $\triangle 1 \cong \triangle 4$	4) trans prop of \cong

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7) Statements	Reasons
1) $\triangle 2 \cong \triangle 4$	1) Given
2) $\triangle 10 \cong \triangle 6$	2) Given
3) $\triangle 10 \cong \triangle 4$	3) vertical \triangle 's are \cong
4) $\triangle 2 \cong \triangle 12$	4) vertical \triangle 's are \cong
5) $\triangle 6 \cong \triangle 8$	5) vertical \triangle 's are \cong
6) $\triangle 12 \cong \triangle 8$	6) trans. prop of \cong

8) Statements	Reasons
1) \overline{DB} bisects $\angle AOC$	1) Given
2) $\angle 1 \cong \angle 3$	2) Given
3) $\angle 1 \cong \angle 2$	3) def. of \angle bisector
4) $\angle 3 \cong \angle 2$	4) Trans. prop of \cong
5) $\angle 3 \cong \angle 4$	5) vertical \angle 's are \cong
6) $\angle 2 \cong \angle 4$	6) Trans. prop of \cong

9) Statements	Reasons
1) \overline{xz} bisects $\angle WXY$	1) Given
2) $\angle 1 \cong \angle 2$	2) def. of \angle bisector
3) $\angle 1 \cong \angle 3$	3) vertical \angle 's are \cong
4) $\angle 2 \cong \angle 3$	4) trans. prop of \cong

10) Statements	Reasons
1) $\angle 3 \cong \angle 13$	1) Given
2) $\angle 15 \cong \angle 9$	2) Given
3) $\angle 13 \cong \angle 15$	3) vertical \angle 's are \cong
4) $\angle 1 \cong \angle 3$	4) vertical \angle 's are \cong
5) $\angle 9 \cong \angle 11$	5) vertical \angle 's are \cong
6) $\angle 1 \cong \angle 11$	6) trans. prop of \cong