G.CO.C.11: Parallelograms 1

1. In quadrilateral $\text{BLUE}$ shown below, $\overline{BE} \cong \overline{UL}$.

Which information would be sufficient to prove quadrilateral $\text{BLUE}$ is a parallelogram?

1) $\overline{BL} \parallel \overline{EU}$
2) $\overline{LU} \parallel \overline{BE}$
3) $\overline{BE} \cong \overline{BL}$
4) $\overline{LU} \cong \overline{EU}$

2. Quadrilateral $\text{ABCD}$ with diagonals $\overline{AC}$ and $\overline{BD}$ is shown in the diagram below.

Which information is not enough to prove $\text{ABCD}$ is a parallelogram?

1) $\overline{AB} \cong \overline{CD}$ and $\overline{AB} \parallel \overline{DC}$
2) $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{DA}$
3) $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \parallel \overline{AD}$
4) $\overline{AB} \parallel \overline{DC}$ and $\overline{BC} \parallel \overline{AD}$

3. Quadrilateral $\text{ABCD}$ has diagonals $\overline{AC}$ and $\overline{BD}$. Which information is not sufficient to prove $\text{ABCD}$ is a parallelogram?

1) $\overline{AC}$ and $\overline{BD}$ bisect each other.
2) $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \cong \overline{AD}$
3) $\overline{AB} \cong \overline{CD}$ and $\overline{AB} \parallel \overline{CD}$
4) $\overline{AB} \cong \overline{CD}$ and $\overline{BC} \parallel \overline{AD}$

4. Parallelogram $\text{HAND}$ is drawn below with diagonals $\overline{HN}$ and $\overline{AD}$ intersecting at $S$.

Which statement is always true?

1) $\overline{AN} = \frac{1}{2} \overline{AD}$
2) $\overline{AS} = \frac{1}{2} \overline{AD}$
3) $\angle \text{AHS} \cong \angle \text{ANS}$
4) $\angle \text{HDS} \cong \angle \text{NDS}$

5. Which statement about parallelograms is always true?

1) The diagonals are congruent.
2) The diagonals bisect each other.
3) The diagonals are perpendicular.
4) The diagonals bisect their respective angles.
6 Quadrilateral $MATH$ has both pairs of opposite sides congruent and parallel. Which statement about quadrilateral $MATH$ is always true?
1) $MT \cong AH$
2) $MT \perp AH$
3) $\angle MHT \cong \angle ATH$
4) $\angle MAT \cong \angle MHT$

7 In parallelogram $ABCD$ shown below, the bisectors of $\angle ABC$ and $\angle DCB$ meet at $E$, a point on $AD$.

If $m\angle A = 68^\circ$, determine and state $m\angle BEC$. 
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Answer Section

1  ANS: 2  REF: 061720geo
2  ANS: 3
(3) Could be a trapezoid.

   REF: 081607geo
3  ANS: 4  REF: 061513geo
4  ANS: 2  REF: 011802geo
5  ANS: 2  REF: 011912geo
6  ANS: 4  REF: 081813geo
7  ANS: 

   REF: 081826geo