Preparing for College Entrance Exams

Strategy for Success
You may find it helpful to sketch figures or do calculations in your test booklet. Be careful not to make extra marks on your answer sheet.

Indicate the best answer by writing the appropriate letter.

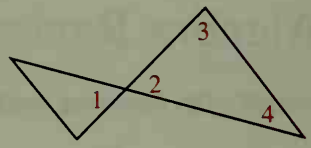
1. The diagonals of quadrilateral $MNOP$ intersect at X. Which statement guarantees that $MNOP$ is a rectangle?
   (A) $MX = NX = OX = PX$ **(B)** $\angle PMN \cong \angle MNO \cong \angle NOP$
   (C) $MO = NP$ **(D)** $\overline{MO} \perp \overline{NP}$ **(E)** $\overline{MN} \perp \overline{MP}$

2. Which statement does *not* guarantee that quadrilateral $WXYZ$ is a parallelogram?
   (A) $\overline{WX} \cong \overline{YZ}$; $\overline{XY} \parallel \overline{WZ}$ **(B)** $\angle W \cong \angle Y$; $\angle X \cong \angle Z$
   (C) $\overline{WX} \cong \overline{YZ}$; $\overline{XY} \cong \overline{WZ}$ **(D)** $\overline{XY} \parallel \overline{WZ}$; $\overline{WX} \parallel \overline{ZY}$
   (E) $\overline{XY} \cong \overline{WZ}$; $\overline{XY} \nparallel \overline{WZ}$

3. In $\triangle ABC$, if $AB = BC$ and $AC > BC$, then:
   (A) $AB < AC - BC$ **(B)** $m\angle B > m\angle C$ **(C)** $m\angle B < m\angle A$
   (D) $m\angle B = 60$ **(E)** $m\angle B = m\angle A$

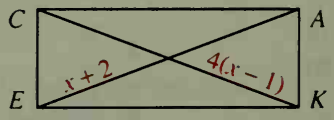
4. Which statement is not always true for every rhombus $ABCD$?
   (A) $AB = BC$ **(B)** $AC = BD$ **(C)** $\angle B \cong \angle D$
   (D) $\overline{AC} \perp \overline{BD}$ **(E)** $\angle ABD \cong \angle CBD$

5. Given: $m\angle 3 > m\angle 4$
   Compare: $x = m\angle 1 + m\angle 4$ and
   $y = m\angle 2 + m\angle 3$
   (A) $x > y$ **(B)** $y > x$ **(C)** $x = y$
   (D) No comparison possible with information given



6. Given: Trapezoid $LMNO$; $\overleftrightarrow{MN} \parallel \overleftrightarrow{LO}$; $\overline{LO}$ is twice as long as $\overline{MN}$. How long is the median of the trapezoid?
   (A) $\frac{4}{3}LO$ **(B)** $\frac{3}{2}LO$ **(C)** $\frac{2}{3}MN$ **(D)** $\frac{3}{4}MN$ **(E)** $\frac{3}{2}MN$

7. Quad. $CAKE$ is a rectangle. Find CK.
   (A) 2 **(B)** 3 **(C)** 4 **(D)** 6 **(E)** 8



8. Which of the following statement(s) are true?
   (I) If $a > b$, then $ax > bx$ for all numbers x.
   (II) If $ax > bx$ for some number x, then $a > b$.
   (III) If $a > b$, then for some number x, $ax < bx$.
   (A) I only **(B)** II only **(C)** III only **(D)** all of the above
   (E) none of the above