Preparing for College Entrance Exams

Strategy for Success

When you are taking a college entrance exam, be sure to read the directions, the questions, and the answer choices very carefully. In the test booklet, you may want to underline important words such as *not*, *exactly*, *false*, *never*, and *except*, and to cross out answer choices that are clearly incorrect.

Indicate the best answer by writing the appropriate letter.

1. On a number line, point M has coordinate -3 and point R has coordinate 6. Point Z is on $\overrightarrow{RM}$ and $RZ = 4$. Find the coordinate of Z.
   (A) -7 **(B)** 1 **(C)** 2 **(D)** 10 **(E)** cannot be determined

2. $\angle 1$ and $\angle 2$ are complementary. $m\angle 1 = 5x + 15$ and $m\angle 2 = 10x$. The measure of $\angle 1$ is:
   (A) 5 **(B)** 11 **(C)** 40 **(D)** 70 **(E)** 30

3. Vertical angles are never:
   (A) complementary **(B)** supplementary **(C)** right angles
   (D) adjacent **(E)** congruent

4. A reason that cannot be used to justify a statement in a proof is:
   (A) a postulate **(B)** a definition **(C)** given information
   (D) yesterday's theorem **(E)** tomorrow's theorem

5. Which of the following must be true?
   (I) If two lines form congruent adjacent angles, then the lines are perpendicular.
   (II) If two lines are perpendicular, then they form congruent adjacent angles.
   (III) If the exterior sides of two adjacent obtuse angles are perpendicular, then the angles are complementary.
   (A) I only **(B)** II only **(C)** III only
   (D) I and II only **(E)** I, II, and III

6. $\angle 1$ and $\angle 2$ are congruent angles. $m\angle 1 = 10x - 20$ and $m\angle 2 = 8x + 2$. $\angle 1$ is a(n) $\underline{\quad ? \quad}$ angle.
   (A) acute **(B)** right **(C)** obtuse **(D)** straight
   (E) answer cannot be determined

7. If you know that $m\angle A = m\angle B$ and $m\angle B = m\angle C$, then what reason can you give for the statement that $m\angle A = m\angle C$?
   (I) Reflexive Property (II) Transitive Property (III) Substitution Property
   (A) I only **(B)** II only **(C)** III only
   (D) either I or II **(E)** either II or III

8. Which of the following is *not* the converse of the statement: If b, then c.
   (A) If c, then b. **(B)** b if c. **(C)** c if and only if b.
   (D) c only if b. **(E)** c implies b.