

Part I

Answer all 24 questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Record your answers on your separate answer sheet. [48]

Use this space for
computations.

1 A two-dimensional cross section is taken of a three-dimensional object. If this cross section is a triangle, what can *not* be the three-dimensional object?

- (1) cone
- (2) cylinder
- (3) pyramid
- (4) rectangular prism

2 The image of $\triangle DEF$ is $\triangle D'E'F'$. Under which transformation will the triangles *not* be congruent?

- (1) a reflection through the origin
- (2) a reflection over the line $y = x$
- (3) a dilation with a scale factor of 1 centered at (2,3)
- (4) a dilation with a scale factor of $\frac{3}{2}$ centered at the origin

3 The vertices of square $RSTV$ have coordinates $R(-1,5)$, $S(-3,1)$, $T(-7,3)$, and $V(-5,7)$. What is the perimeter of $RSTV$?

- (1) $\sqrt{20}$
- (2) $\sqrt{40}$
- (3) $4\sqrt{20}$
- (4) $4\sqrt{40}$