Part I

Answer all 28 questions in this part. Each correct answer will receive 2 credits. No partial credit will be allowed. For each question, write on the separate answer sheet the numeral preceding the word or expression that best completes the statement or answers the question. [56]

Use this space for computations.

1 The statement "x is a multiple of 3, and x is an even integer" is true when x is equal to

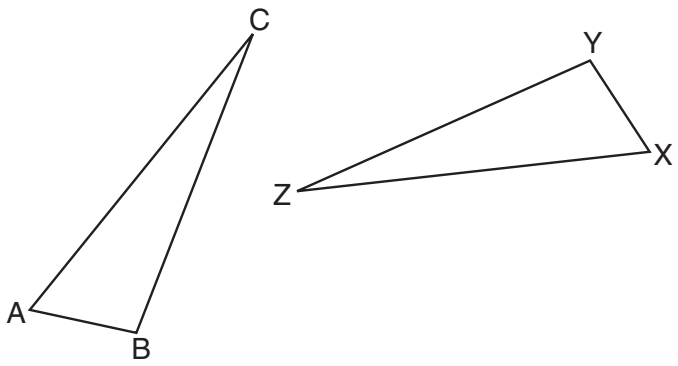
(1) 9

(2) 8

(3) 3

(4) 6

2 In the diagram below, $\triangle ABC \cong \triangle XYZ$.



Which statement must be true?

(1) $\angle C \cong \angle Y$

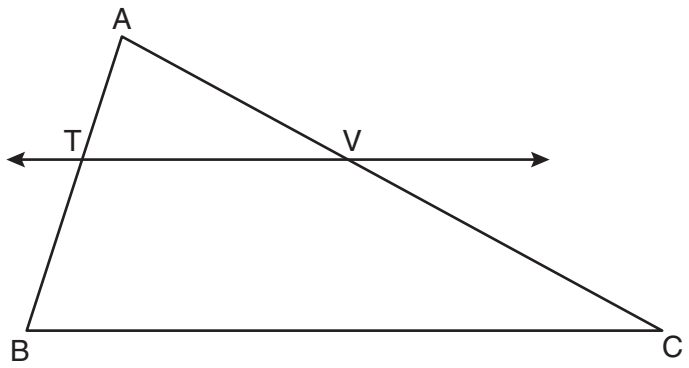
(2) $\angle A \cong \angle X$

(3) $\overline{AC} \cong \overline{YZ}$

(4) $\overline{CB} \cong \overline{XZ}$

Use this space for computations.

3 In the diagram below of $\triangle ABC$, $\overleftrightarrow{TV} \parallel \overline{BC}$, $AT = 5$, $TB = 7$, and $AV = 10$.



What is the length of $\overline{VC}$?

(1) $3\frac{1}{2}$

(2) $7\frac{1}{7}$

(3) 14

(4) 24

4 Pentagon $PQRST$ has $\overline{PQ}$ parallel to $\overline{TS}$. After a translation of $T_{2,-5}$, which line segment is parallel to $\overline{P'Q'}$?

(1) $\overline{R'Q'}$

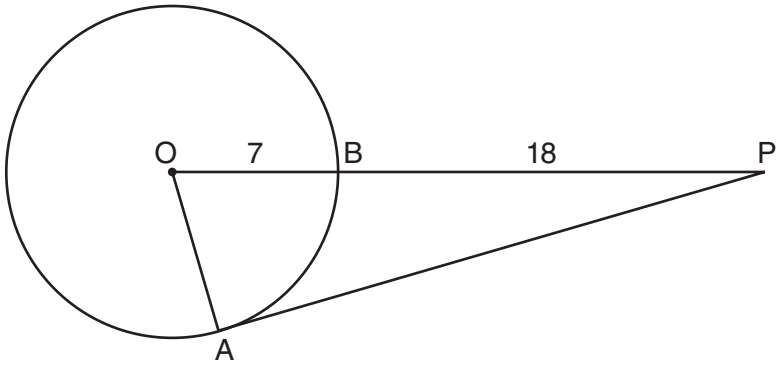
(2) $\overline{R'S'}$

(3) $\overline{T'S'}$

(4) $\overline{T'P'}$

Use this space for computations.

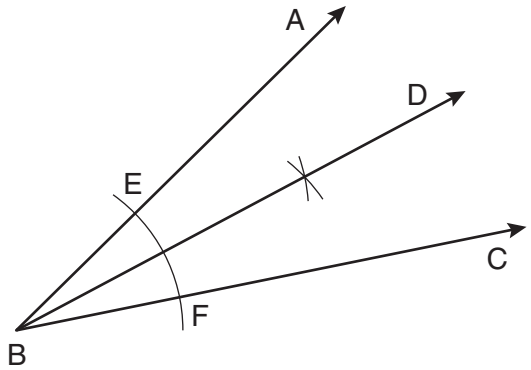
5 In the diagram below of $\triangle PAO$, $\overline{AP}$ is tangent to circle O at point A, $OB = 7$, and $BP = 18$.



What is the length of $\overline{AP}$?

(1) 10
(2) 12
(3) 17
(4) 24

6 A straightedge and compass were used to create the construction below. Arc EF was drawn from point B, and arcs with equal radii were drawn from E and F.



Which statement is *false*?

(1) $m\angle ABD = m\angle DBC$
(2) $\frac{1}{2}(m\angle ABC) = m\angle ABD$
(3) $2(m\angle DBC) = m\angle ABC$
(4) $2(m\angle ABC) = m\angle CBD$

Use this space for computations.

7 What is the length of the line segment whose endpoints are $(1,-4)$ and $(9,2)$?

(1) 5
(3) 10
(2) $2\sqrt{17}$
(4) $2\sqrt{26}$

8 What is the image of the point $(2,-3)$ after the transformation $r_{y\text{-axis}}$?

(1) $(2,3)$
(3) $(-2,3)$
(2) $(-2,-3)$
(4) $(-3,2)$