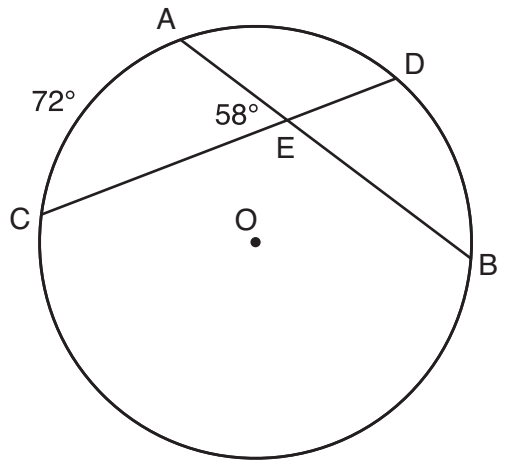
**Use this space for computations.**

**17** In the diagram below of circle $O$, chords $\overline{AB}$ and $\overline{CD}$ intersect at $E$.




If $m\overset{\frown}{AC} = 72°$ and $m\angle AEC = 58°$, how many degrees are in $m\overset{\frown}{DB}$?

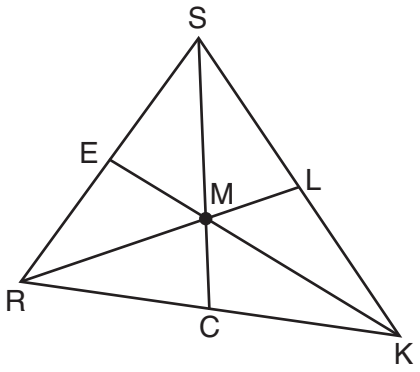
(1) 108°

(2) 65°

(3) 44°

(4) 14°

**18** In triangle $SRK$ below, medians $\overline{SC}$, $\overline{KE}$, and $\overline{RL}$ intersect at $M$.




Which statement must always be true?

(1) $3(MC) = SC$

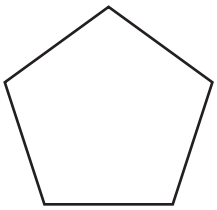
(2) $MC = \frac{1}{3}(SM)$

(3) $RM = 2MC$

(4) $SM = KM$

**Use this space for computations.**

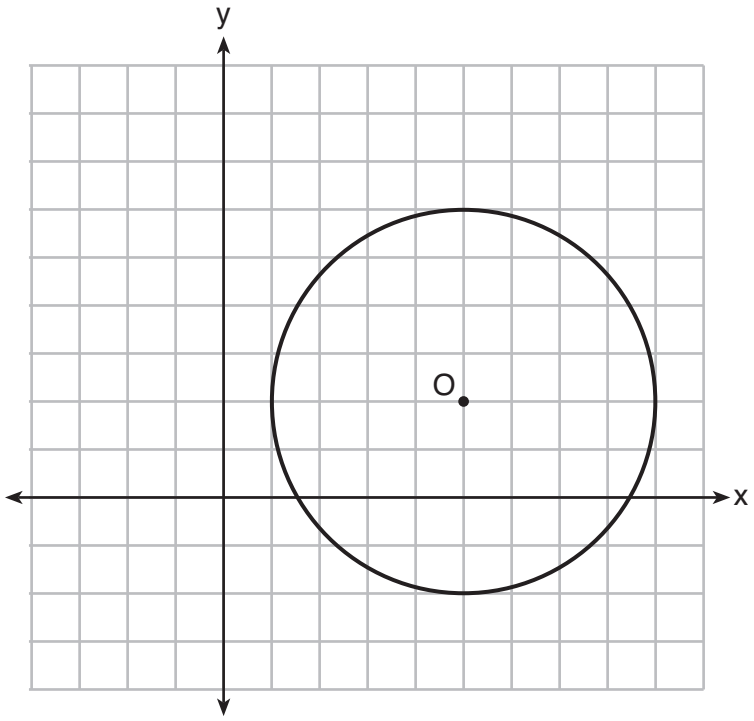
**19** The regular polygon below is rotated about its center.



Which angle of rotation will carry the figure onto itself?

(1) 60°
(2) 108°
(3) 216°
(4) 540°

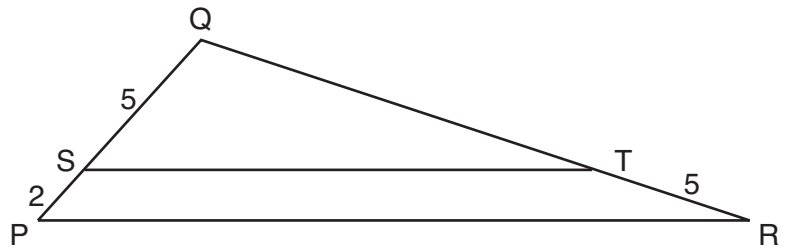
**20** What is an equation of circle $O$ shown in the graph below?




(1) $x^2 + 10x + y^2 + 4y = -13$
(2) $x^2 - 10x + y^2 - 4y = -13$
(3) $x^2 + 10x + y^2 + 4y = -25$
(4) $x^2 - 10x + y^2 - 4y = -25$

**Use this space for computations.**

**21** In the diagram below of $\triangle PQR$, $\overline{ST}$ is drawn parallel to $\overline{PR}$, $PS = 2$, $SQ = 5$, and $TR = 5$.




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

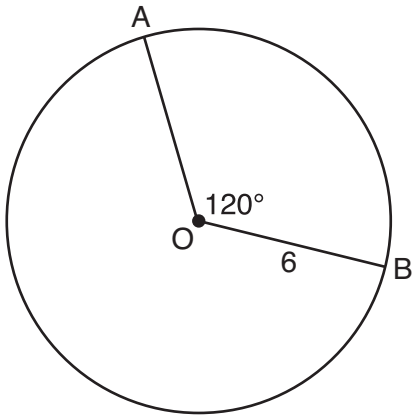
(1) 7

(2) 2

(3) $12\frac{1}{2}$

(4) $17\frac{1}{2}$

**22** The diagram below shows circle $O$ with radii $\overline{OA}$ and $\overline{OB}$. The measure of angle $AOB$ is 120°, and the length of a radius is 6 inches.




Which expression represents the length of arc $AB$, in inches?

(1) $\frac{120}{360}(6\pi)$

(2) $120(6)$

(3) $\frac{1}{3}(36\pi)$

(4) $\frac{1}{3}(12\pi)$

**Use this space for computations.**

**23** Line segment $CD$ is the altitude drawn to hypotenuse $\overline{EF}$ in right triangle $ECF$. If $EC = 10$ and $EF = 24$, then, to the *nearest tenth*, $ED$ is

(1) 4.2
(2) 5.4
(3) 15.5
(4) 21.8

**24** Line $MN$ is dilated by a scale factor of 2 centered at the point (0,6). If $\overleftrightarrow{MN}$ is represented by $y = -3x + 6$, which equation can represent $\overleftrightarrow{M'N'}$, the image of $\overleftrightarrow{MN}$?

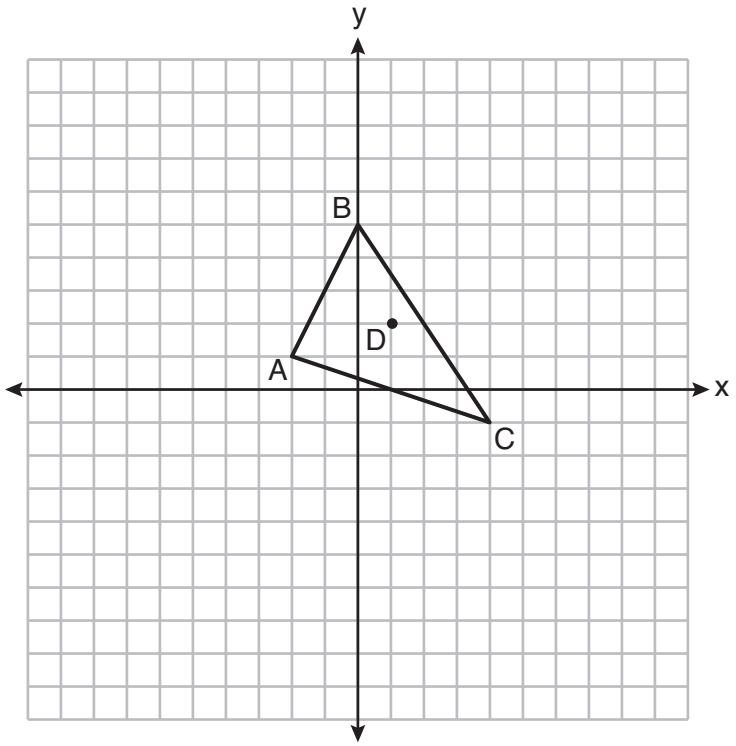
(1) $y = -3x + 12$
(2) $y = -3x + 6$
(3) $y = -6x + 12$
(4) $y = -6x + 6$

## Part II

**Answer all 7 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil.** [14]

**25** Triangle $A'B'C'$ is the image of triangle $ABC$ after a translation of 2 units to the right and 3 units up. Is triangle $ABC$ congruent to triangle $A'B'C'$? Explain why.

**26** Triangle $ABC$ and point $D(1,2)$ are graphed on the set of axes below.




Graph and label $\triangle A'B'C'$, the image of $\triangle ABC$, after a dilation of scale factor 2 centered at point $D$.