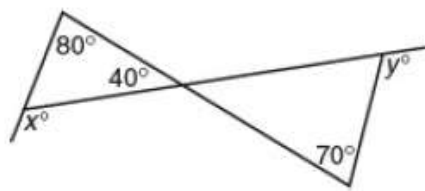
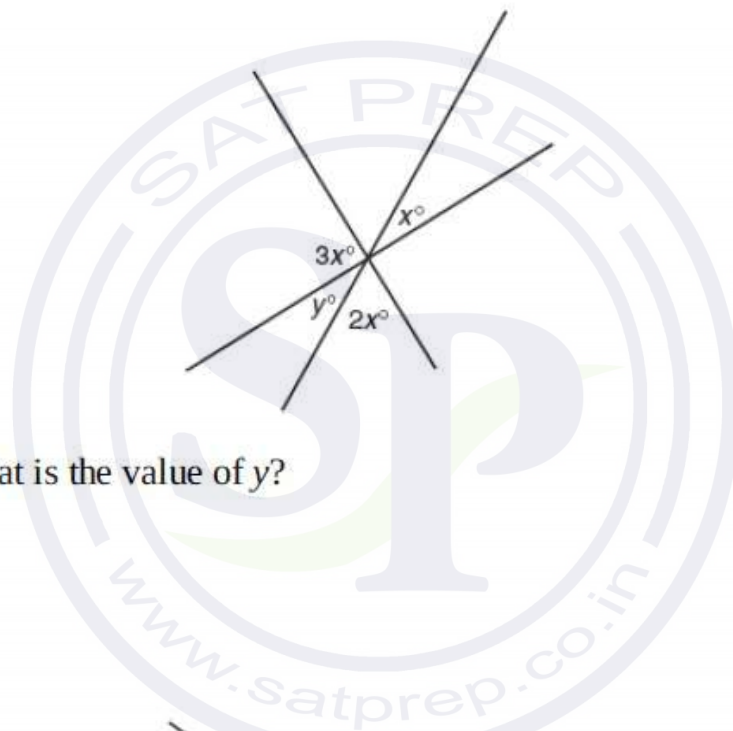


Multiple-Choice



1. In the figure above, $x + y =$

- (A) 270
- (B) 230
- (C) 210
- (D) 190



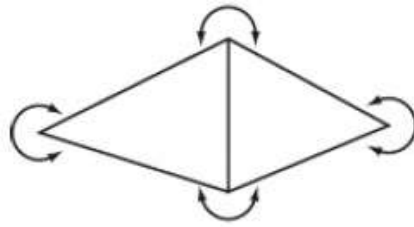
2. In the figure above, what is the value of y ?

- (A) 20
- (B) 30
- (C) 45
- (D) 60



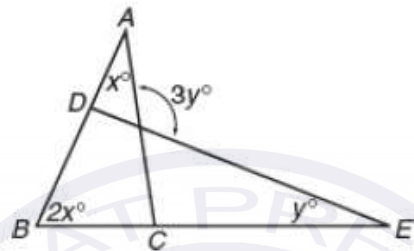
3. In the figure above, if $l_1 \parallel l_2$, what is the value of x ?

- (A) 90
- (B) 85
- (C) 75
- (D) 70



4. In the figure above, what is the sum of the degree measures of all of the angles marked?

- (A) 540
- (B) 720
- (C) 900
- (D) 1080



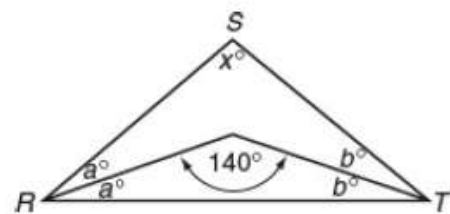
5. In the figure above, what is y in terms of x ?

- (A) $\frac{3}{2}x$
- (B) $\frac{4}{3}x$
- (C) x
- (D) $\frac{3}{4}x$



6. In the figure above, if line segment AB is parallel to line segment CD , what is the value of y ?

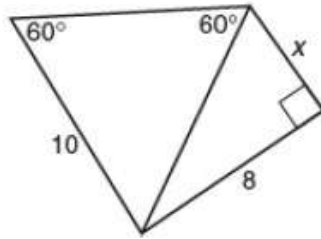
- (A) 12
- (B) 15
- (C) 18
- (D) 20



Note: Figure not drawn to scale.

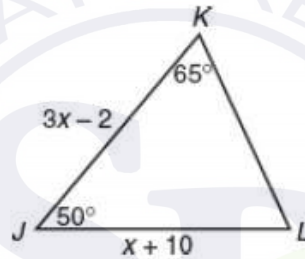
7. In $\triangle RST$ above, what is the value of x ?

- (A) 80
- (B) 90
- (C) 100
- (D) 110



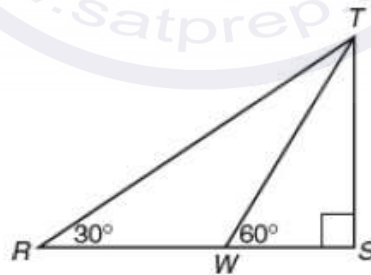
8. In the figure above, $x =$

- (A) 4
- (B) 6
- (C) $4\sqrt{2}$
- (D) $4\sqrt{3}$



9. In $\triangle JKL$ above, what is the value of x ?

- (A) 2
- (B) 3
- (C) 4
- (D) 6



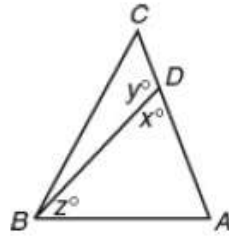
Note: Figure not drawn to scale.

10. In the figure above, what is the ratio of RW to WS ?

- (A) $\sqrt{2}$ to 1
- (B) $\sqrt{3}$ to 1
- (C) 2 to 1
- (D) 3 to 1

11. Katie hikes 5 miles north, 7 miles east, and then 3 miles north again. What number of miles, measured in a straight line, is Katie from her starting point?

- (A) $\sqrt{83}$
- (B) 10
- (C) $\sqrt{113}$
- (D) 13

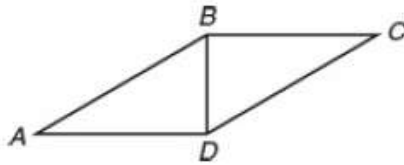


Note: Figure not drawn to scale.

12. In $\triangle ABC$, if $AB = BD$, which of the following statements must be true?
- I. $x > z$
 - II. $y > x$
 - III. $AB > BC$
- (A) I only
 - (B) II only
 - (C) I and II only
 - (D) II and III only
13. How many different triangles are there for which the lengths of the sides are 3, 8, and n , where n is an integer and $3 < n < 8$?
- (A) Two
 - (B) Three
 - (C) Four
 - (D) Five



14. If, in the figure above, $AC = 3$, $DB = 4$, and $AB = 14$, then $AE =$
- (A) 4.5
 - (B) 6
 - (C) 8
 - (D) 10.5
15. What is the number of sides of a polygon in which the sum of the degree measures of the interior angles is 4 times the sum of the degree measures of the exterior angles?
- (A) 10
 - (B) 12
 - (C) 14
 - (D) No such polygon exists.



16. For parallelogram $ABCD$ above, if $AB > BD$, which of the following statements must be true?

- I. $CD < BD$
- II. $\angle ADB > \angle C$
- III. $\angle CBD > \angle A$

- (A) None
- (B) I only
- (C) II and III only
- (D) I and III only



17. If, in the figure above, $CD = 1$, $AB = 2$, and $AD = 6$, then $BC =$

- (A) 5
- (B) 9
- (C) $2 + \sqrt{5}$
- (D) $3\sqrt{5}$



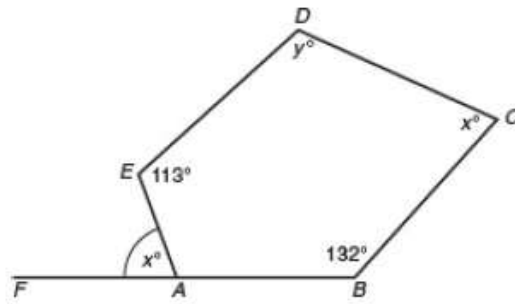
18. In the figure above, what is the sum of the degree measures of the marked angles?

- (A) 120
- (B) 180
- (C) 360
- (D) It cannot be determined from the information given.

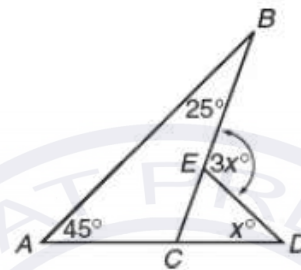
19. If each interior angle of a regular polygon measures 140° , how many sides does the polygon have?

- (A) 5 sides
- (B) 6 sides
- (C) 9 sides
- (D) 10 sides

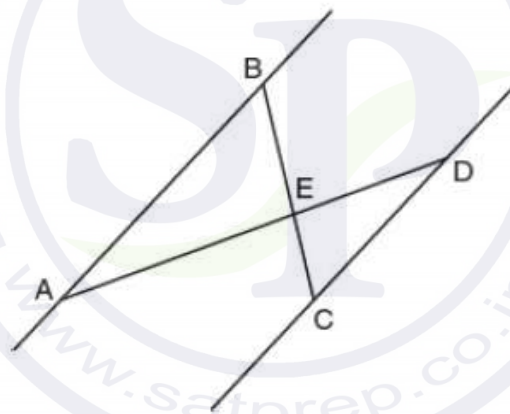
Grid-In



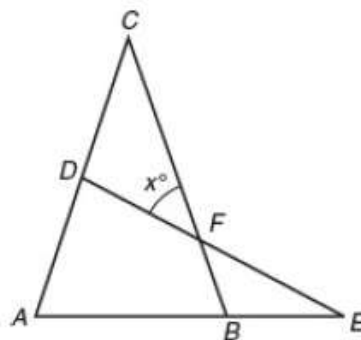
1. In the accompanying figure of pentagon $ABCDE$, points F , A , and B lie on the same line. What is the value of y ?



2. In the figure above, what is the value of x ?



3. In the figure above, $\overline{AB} \parallel \overline{CD}$, $AD = 30$, $AB = 21$, and $CD = 15$. What is the length of \overline{DE} ?
4. In the accompanying diagram of triangle ABC , $AC = BC$, D is a point on \overline{AC} , \overline{AB} is extended to E , and \overline{DFE} is drawn so that $\triangle ADE \sim \triangle ABC$. If $m\angle C = 30$, what is the value of x ?



5. Two hikers started at the same location. One traveled 2 miles east and then 1 mile north. The other traveled 1 mile west and then 3 miles south. At the end of their hikes, how many miles apart were the

two hikers?

