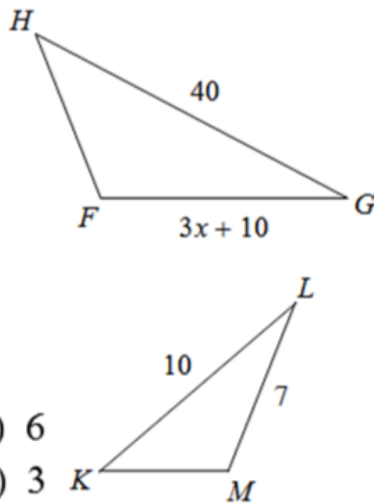


Geo B - Final Exam Prep
Section 1 - Similarity

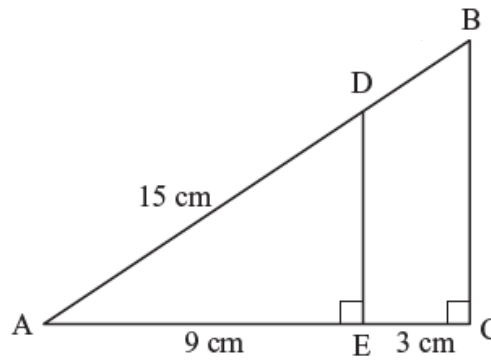
1. find x.

$\triangle HGF \sim \triangle KLM$



- A) 10
- B) 6
- C) 12
- D) 3

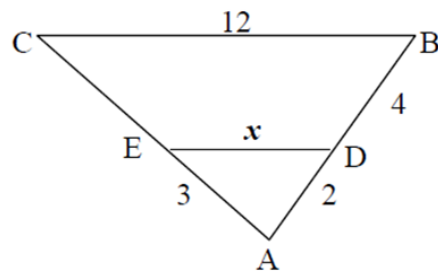
2. What is the length of \overline{AB}



- A. 3
- B. 5
- C. 12
- D. 15
- E. 20

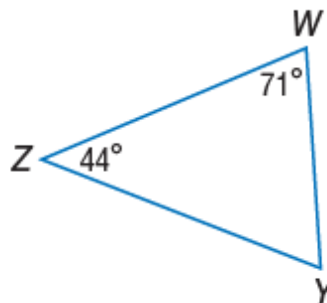
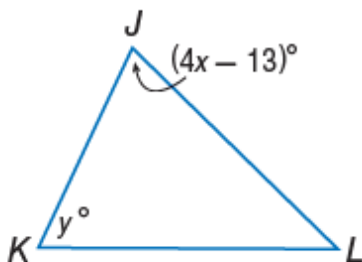
3. If triangles ADE and ABC shown in the figure to the right are similar, what is the value of x?

- A. 2
- B. 3
- C. 4
- D. 5
- E. 6



4. Find x.

$\triangle JKL \sim \triangle WYZ$

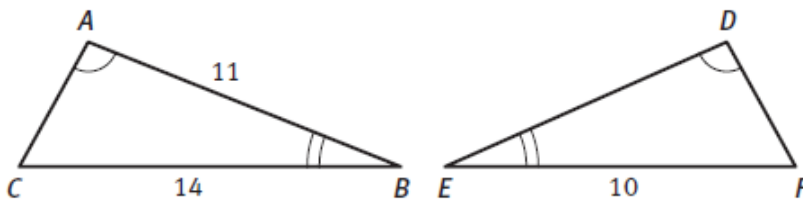


- A. 12
- B. 18
- C. 21
- D. 25
- E. 28

5. Two similar rectangles have a scale factor of 3:5. The perimeter of the large rectangle is 65 meters. What is the perimeter of the small rectangle?

- A 29 m
- B 39 m
- C 49 m
- D 59 m

6. Find DE in the diagram shown. Write your answer as a decimal rounded to the nearest tenth.

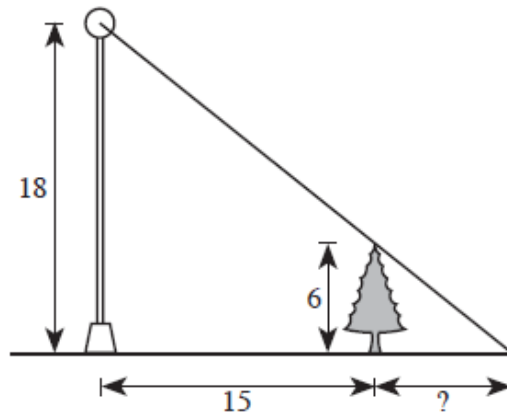


- A. 5.85
- B. 6.78
- C. 7.85
- D. 8.42

7. Two triangles are similar. The smaller triangle has sides of 4, 8, 11. The scale factor between these two triangles is $\frac{4}{9}$. What's the length of the smallest side of the bigger triangle?

- A. 4
- B. 9
- C. 11
- D. 14.2

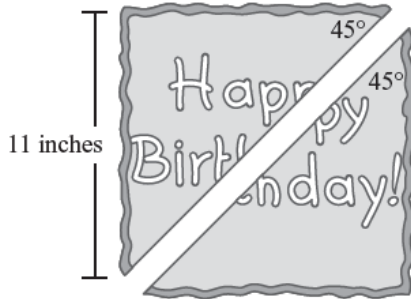
8. A 6-foot spruce tree is planted 15 feet from a lighted streetlight whose lamp is 18 feet above the ground. How many feet long is the shadow of that tree?



- A. 5.0
- B. 7.5
- C. 7.8
- D. 9.6
- E. 10.0

Section - Special rights

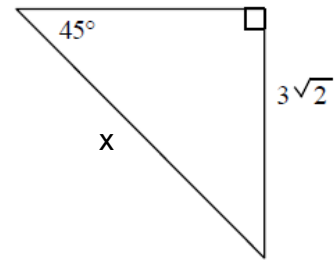
9.



- A. 11
- B. 22
- C. $11\sqrt{2}$
- D. $22\sqrt{2}$
- E. $11\sqrt{3}$

If the side of the cake is 11 inches, how long is the diagonal of the cake?

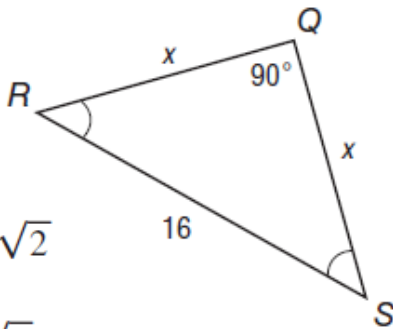
10.



- a. 12
- b. 6
- c. 5
- d. 18

11.

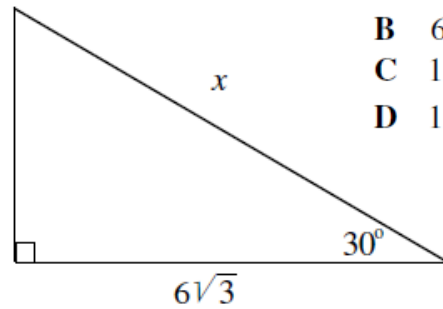
In the triangle below, what is the value of x ?



- A 32
- B $16\sqrt{2}$
- C 8
- D $8\sqrt{2}$

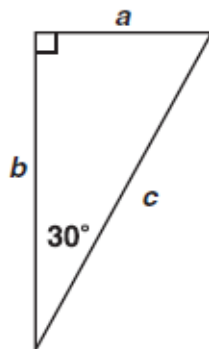
12.

What is the value of x in the triangle below?



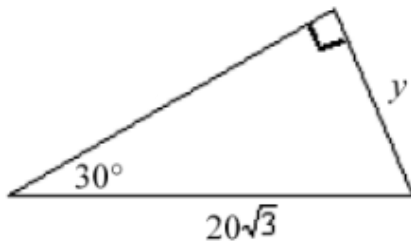
- A $3\sqrt{3}$
- B 6
- C 12
- D $12\sqrt{3}$

13. If $a = 3\sqrt{3}$ in the right triangle below, what is the value of b ?



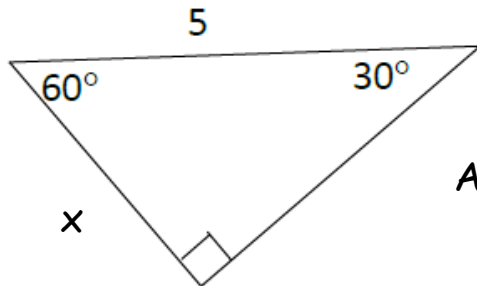
- A 9
- B $6\sqrt{3}$
- C $12\sqrt{3}$
- D 18

14



- A. 20 B. 10 C. $10\sqrt{3}$ D. $10\sqrt{2}$

15



- A. 5 B. 10 C. $5/2$ D. $5\sqrt{2}$

Simplify.

16

$$\sqrt{108}$$

- A) $8\sqrt{10}$ B) $6\sqrt{3}$
 C) 24 D) $3\sqrt{10}$

17 $\sqrt{16}$

- A) 6 B) 4
 C) 15 D) $10\sqrt{3}$

18

$$\sqrt{128}$$

- A) $8\sqrt{2}$ B) 12
 C) $18\sqrt{2}$ D) $8\sqrt{6}$

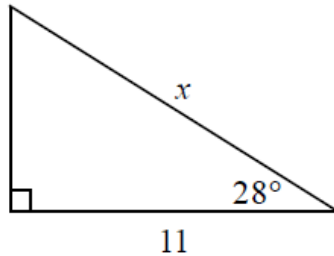
19 $\sqrt{150}$

- A) $5\sqrt{6}$ B) $3\sqrt{2}$
 C) $6\sqrt{7}$ D) $3\sqrt{10}$

Section - Trig

Find the value of x . Round to the nearest tenth.

20



a. 12.5

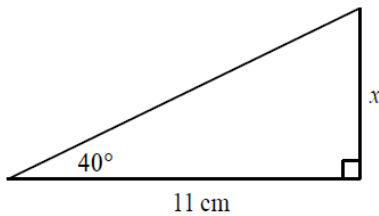
b. 10

c. 13

d. 9.7

21

Find the value of x . Round the length to the nearest tenth.



a. 7.1 cm

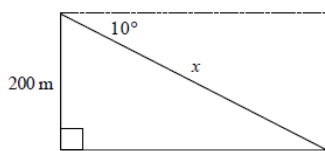
b. 13.1 cm

c. 9.2 cm

d. 8.4 cm

22

Find x



Not drawn to scale

a. 1134.3 m

b. 1151.8 m

c. 34.7 m

d. 203.1 m

23

A tree casts a 26-meter shadow when the angle of elevation of the sun measures 42° . To the nearest meter, how tall is the tree?

A 17 meters

B 19 meters

C 23 meters

D 25 meters

24

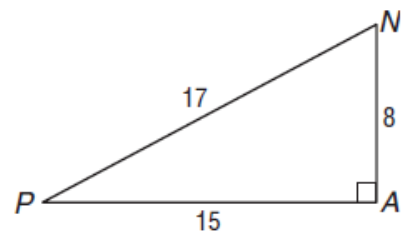
What is $\sin P$?

A $\frac{8}{17}$

B $\frac{8}{15}$

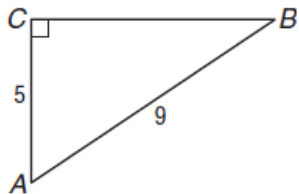
C $\frac{15}{17}$

D $\frac{15}{8}$



25

Find the measure of angle B to the nearest degree.



- A** 29° **B** 34°
C 56° **D** 61°

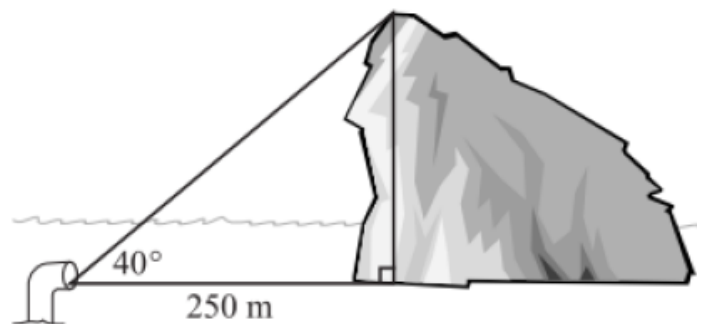
26

Billy is 74 in. tall, and his shadow is 70 in. long. What is the *approximate* angle of elevation of the sun?

- A** 19°
B 43°
C 47°
D 71°

27 What is the height of the iceberg to the nearest meter?

- A.** 161 m
B. 192 m
C. 210 m
D. 298 m



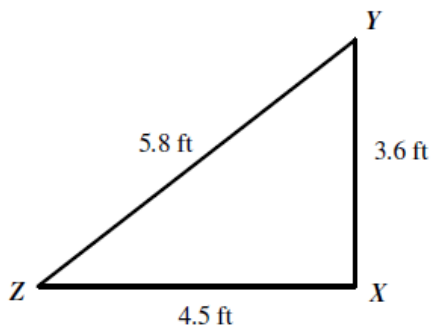
Section - Various triangle topics

28

A triangle has side lengths of 8 cm, 15 cm, and 16 cm. Classify it as acute, obtuse, or right.

- a. obtuse b. right c. acute

29 In the triangle below, which list shows the angles from smallest to largest?



- A $\angle X, \angle Y, \angle Z$
 B $\angle Z, \angle Y, \angle X$
 C $\angle Y, \angle X, \angle Z$
 D $\angle X, \angle Z, \angle Y$

30

Can a triangle have side lengths of 17, 8, and 8?

- A. yes B. no

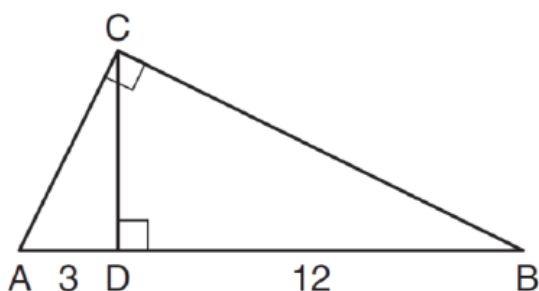
31

Given the following measures of the sides of triangles, which is a right triangle?

- A 41 cm, 40 cm, 9 cm
 B 45 ft, 40 ft, 35 ft
 C 52 in., 50 in., 11 in.
 D 45 yd, 35 yd, 25 yd

In the diagram below of right triangle ABC, altitude \overline{CD} is drawn to hypotenuse \overline{AB} .

32



- A. $6\sqrt{5}$
 B. 6
 C. $3\sqrt{5}$
 D. 3

If $AD = 3$ and $DB = 12$, what is the length of altitude \overline{CD} ?

33 how many diagonals does a 25-gon have?

A. 550

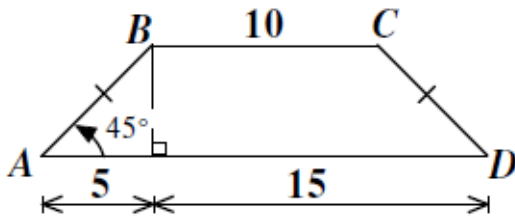
B. 275

C. 55

D. 25

Section - Area of polygons

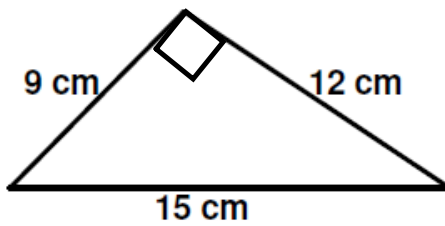
34 What is the area of isosceles trapezoid $ABCD$?



- A 62.5 square units
- B 75.0 square units
- C 76.4 square units
- D 150 square units

Area of triangle?

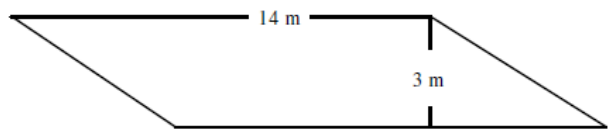
35



- A 36 square cm
- B 54 square cm
- C 90 square cm
- D 108 square cm

36

Look at the quadrilateral below.



What is the area of the figure?

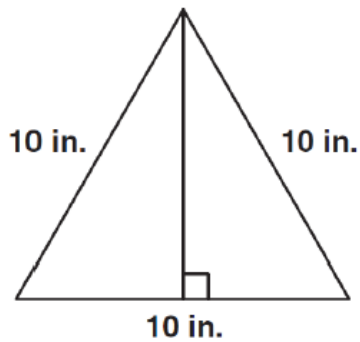
- A 14 square meters
- B 28 square meters
- C 34 square meters
- D 42 square meters

37

A garden has the shape of an isosceles right triangle. The length of the hypotenuse is 24 feet. What is the area of the garden?

- A 576 ft^2
- B 288 ft^2
- C 203 ft^2
- D 144 ft^2

38 What is the area, in square inches, of the triangle below?



- A. 25
- B. $25\sqrt{3}$
- C. 50
- D. $50\sqrt{3}$

39 area of A $30^\circ-60^\circ-90^\circ$ triangle with hypotenuse length of 24

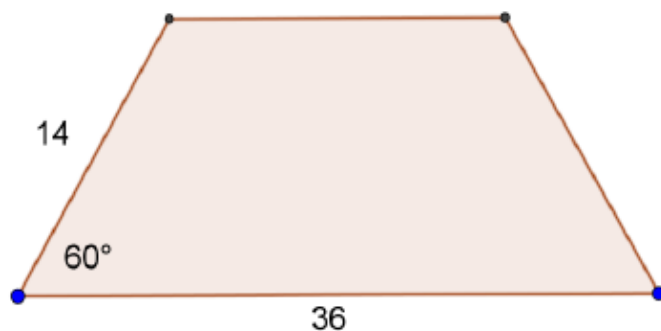
- A. 484
- B. $242\sqrt{3}$
- C. $112\sqrt{3}$
- D. $72\sqrt{3}$

40 area of Isosceles triangle with side lengths 15 ft, 15 ft, 18 ft

- A. $108\sqrt{3}$
- B. 81
- C. 108
- D. $81\sqrt{3}$

41 Find the area of the isosceles trapezoid below.

- a. 504
- b. $203\sqrt{3}$
- c. $406\sqrt{3}$
- d. 873
- e. None of these



section - angles of polygons

42 What is the measure of an interior angle of a regular polygon with 16 sides?

- A 22.5°
- B 25.7°
- C 157.5°
- D 205.7°

43 What is the measure of an interior angle of a regular hexagon?

- A 45°
- B 60°
- C 120°
- D 135°

44 Joe's garden is the shape of a hexagon. The measures of 5 of the angles are: 160° , 90° , 60° , 160° , and 80° . What is the measure of the remaining angle?

- A. 110°
- B. 120°
- C. 160°
- D. 170°

45 What is the measure of each exterior angle of a regular octagon?

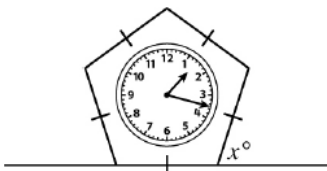
- A. 1080
- B. 360
- C. 135
- D. 45

46 How many diagonals are there in a octagon?

- A. 32
- B. 20
- C. 16
- D. 8

The clock below is in the shape of a regular pentagon. What is x , the degree measure that the bottom side of the clock makes with the surface of the table?

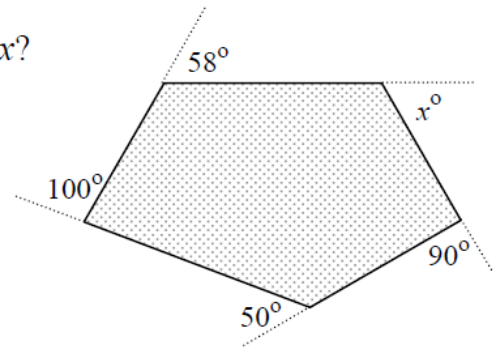
47



- a. 72°
- b. 108°
- c. 112°
- d. 148°

48 In the pentagon at the right, what is the value of x ?

- A. 62
- B. 118
- C. 58
- D. 158
- E. 82



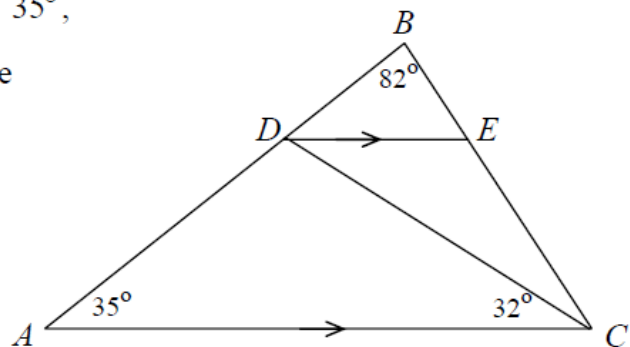
49

In $\triangle ABC$, $\overline{DE} \parallel \overline{AC}$, $m\angle B = 82^\circ$, $m\angle A = 35^\circ$, and $m\angle ACD = 32^\circ$. Find the indicated angle measures:

$m\angle BDE = \underline{\hspace{2cm}}$

$m\angle EDC = \underline{\hspace{2cm}}$

$m\angle ECD = \underline{\hspace{2cm}}$



section - circles

50

Write the standard equation for the circle.

center $(2, 7)$, $r = 4$

a. $(x - 7)^2 + (y - 2)^2 = 16$

b. $(x - 2)^2 + (y - 7)^2 = 4$

c. $(x - 2)^2 + (y - 7)^2 = 16$

d. $(x + 2)^2 + (y + 7)^2 = 4$

51

Find the center and radius of the circle with equation $(x + 9)^2 + (y + 5)^2 = 64$.

a. center $(5, 9)$; $r = 8$

b. center $(9, 5)$; $r = 64$

c. center $(-9, -5)$; $r = 64$

d. center $(-9, -5)$; $r = 8$

52

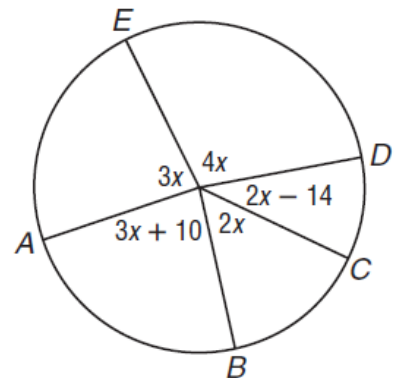
Which of the following arcs has a measure of 38° ?

A \widehat{AB}

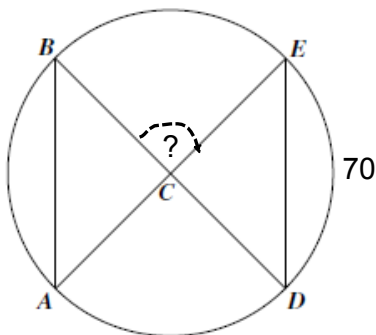
B \widehat{EA}

C \widehat{CD}

D \widehat{BC}

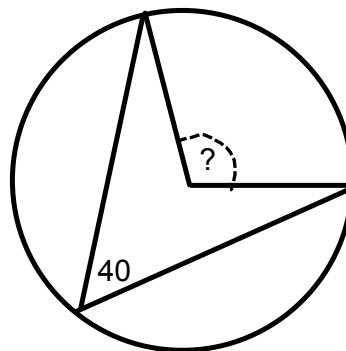


53



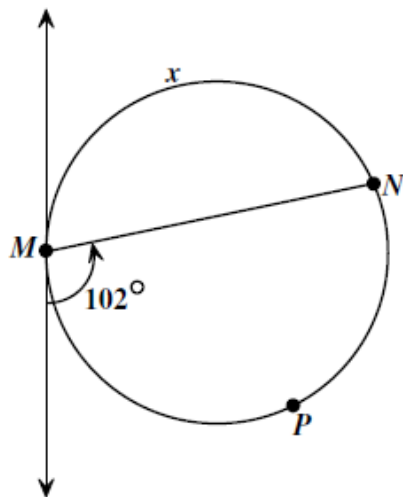
- A. 70
- B. 35
- C. 110
- D. 55

54



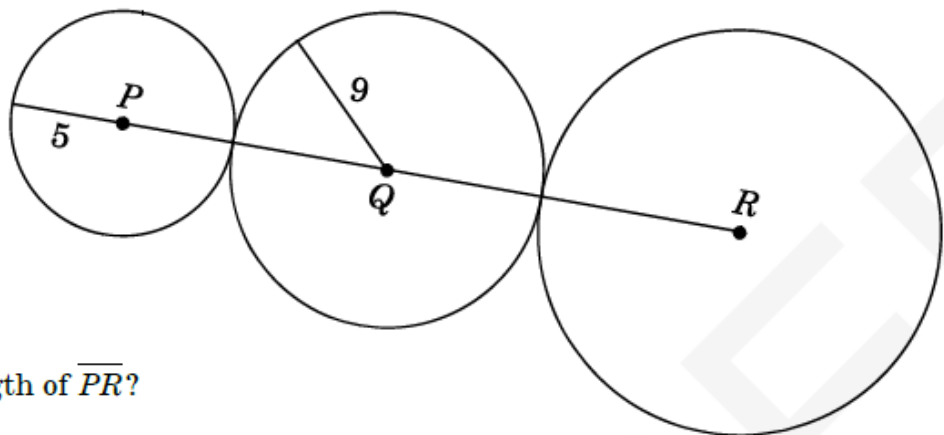
- A. 80
- B. 40
- C. 120
- D. 60

55 What is the value of x in the figure below?



- A 51°
- B 78°
- C 156°
- D 180°

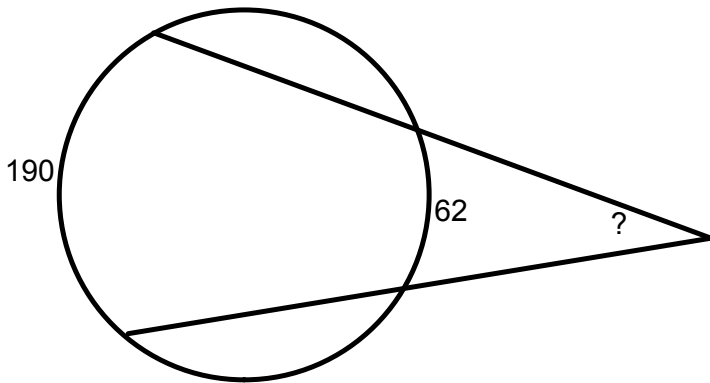
56 Circles P , Q , and R are shown below. The diameter of circle R is 22.



What is the length of \overline{PR} ?

- A 25
- B 34
- C 39
- D 50

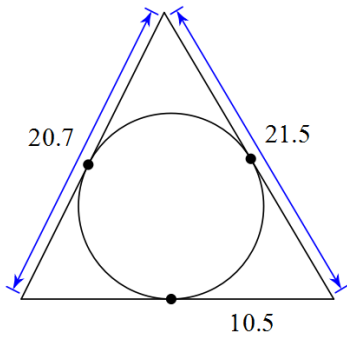
57



- A. 64
- B. 62
- C. 58
- D. 50

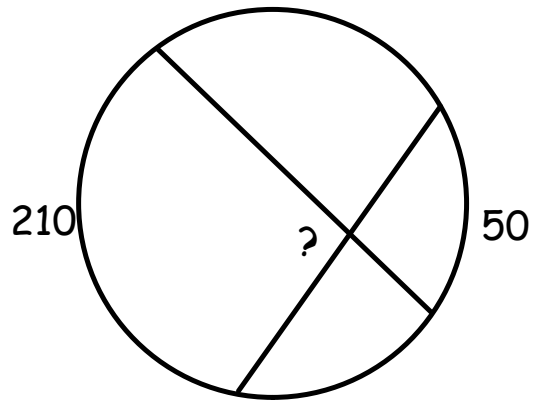
Find the perimeter

58



- A) 70.5
- B) 62.4
- C) 24.8
- D) 74

59



- A. 50
- B. 100
- C. 130
- D. 200
- E. 210