

Geometry Final Exam Review 2014

1. Which of the following statements is false?

- [A] If a line and a plane have no points in common, then they are parallel.
- [B] Any two points are always collinear as well as coplanar.
- [C] A plane separates space into three disjoint subsets.
- [D] A line separates space into three disjoint subsets.

2. Find the word or words that best complete the sentence.

Intersecting lines ? intersect in more than one point.

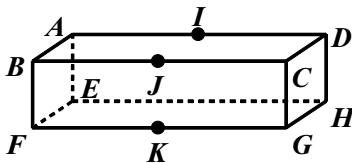
- [A] never [B] always [C] sometimes
- [D] not enough information to tell

3. Find the word or words that best complete the sentence.

Skew lines are ? coplanar.

- [A] never [B] always [C] sometimes
- [D] not enough information to tell

4. Which of the following are noncollinear?

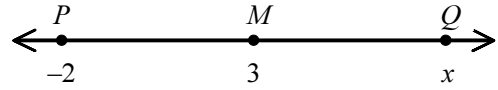


- [A] F, K, G [B] A, I, D
- [C] I, J, K [D] B, J, C

5. If $\angle A$ and $\angle B$ are supplementary angles and $m\angle A = 4m\angle B$, find $m\angle A$ and $m\angle B$.

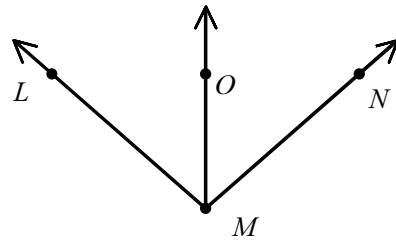
- [A] 144, 36 [B] 135, 45
- [C] 72, 18 [D] 67.5, 22.5

6. If M is the midpoint of \overline{PQ} , find the value of x .



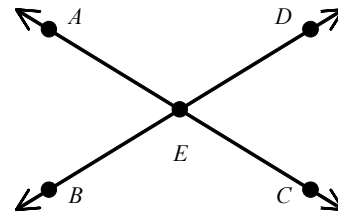
- [A] 10 [B] 1 [C] 5 [D] 8

7. In the figure (not drawn to scale), \overrightarrow{MO} bisects $\angle LMN$, $m\angle LMO = 13x - 24$, and $m\angle NMO = x + 84$. Solve for x and find $m\angle LMN$.



- [A] 9, 226 [B] 5, 33
- [C] 5, 41 [D] 9, 186

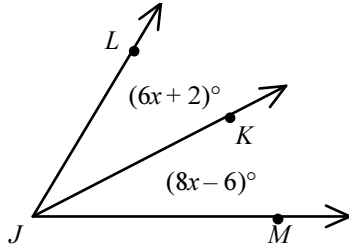
8. In the figure shown, $m\angle AED = 117$. Which of the following statements is false?



- [A] $\angle BEC$ and $\angle CED$ are adjacent angles.
- [B] $\angle AEB$ and $\angle DEC$ are vertical angles.
- [C] $m\angle BEC = 63$
- [D] $m\angle AEB = 63$

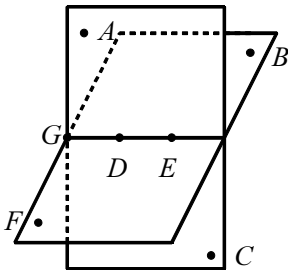
9. Given quadrilateral $ABCD$ with $\angle BAC \cong \angle ACD$ and $\overline{AB} \cong \overline{CD}$. Write a paragraph proof, a flow proof, or a two-column proof to show $ABCD$ is a parallelogram.

10. In the diagram below, \overrightarrow{JK} bisects $\angle LJM$. Find $m\angle LJM$.



- [A] 52 [B] 26 [C] 86
 [D] 65 [E] 35

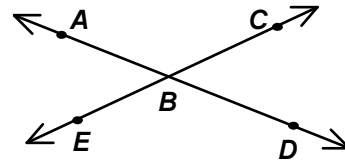
11. Which of the following is *not* a set of coplanar points?



- [A] B, D, F [B] A, C, D, E
 [C] D, E, F, C [D] A, C, E

12. A plane intersects one of two concentric spheres in a great circle. Which of the following is true?
- [A] It does not intersect the other sphere.
 [B] It intersects the second sphere in a great circle.
 [C] It intersects the second sphere but not in a great circle.
 [D] none of the above

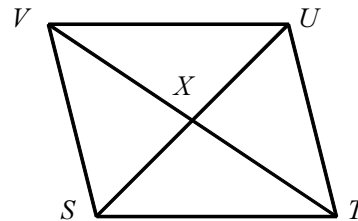
13. Compare the quantity in Column A with the quantity in Column B.



Column A Column B
 $m\angle ABC$ $m\angle ABE$

- [A] The quantity in Column A is greater.
 [B] The quantity in Column B is greater.
 [C] The quantities are equal.
 [D] The relationship cannot be determined on the basis of the information given.

14. Given: $\overline{VU} \cong \overline{ST}$ and $\overline{SV} \cong \overline{TU}$
 Prove: $VX = XT$

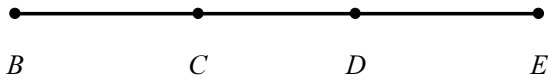


15. Find the inverse of the following statement. If he writes in pen, he can't erase it.
- [A] If he writes in pen, he can erase it.
 [B] If he does not write in pen, he can erase it.
 [C] If he can't erase it, then he does not write in pen.
 [D] If he does not write in pen, he can't erase it.
16. Find the converse of "If it is a shovel, then it is a tool."
- [A] If it is a tool, then it is a shovel.
 [B] If it is a shovel, then it is not a tool.
 [C] If it is not a shovel, then it is not a tool.
 [D] If it is a tool, then it is not a shovel.

17. Write a two-column proof of the following.

Given: $BC = DE$

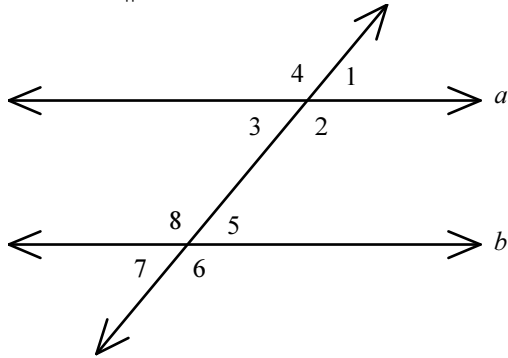
Prove: $BD = CE$



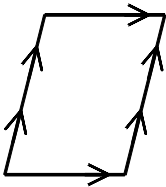
18. Write a two-column proof of the following.

Given: $\angle 5 \cong \angle 3$

Prove: $a \parallel b$

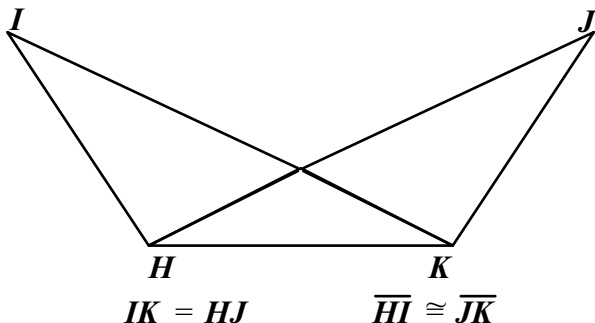


19. Based on the markings, determine if the figure is a parallelogram. If so, justify your answer.

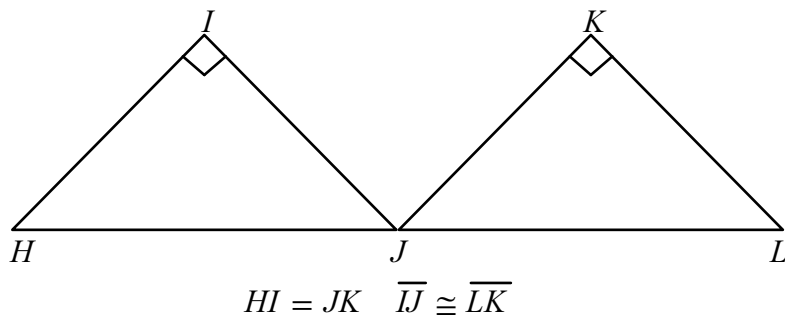


20. Theorem 9-6 states that if one pair of opposite sides of a quadrilateral is congruent and parallel, the quadrilateral is a parallelogram. This condition is met in two quadrilaterals. \overline{AB} is parallel and congruent to \overline{DC} in $ABCD$, \overline{EF} is parallel and congruent to \overline{HG} in $EFGH$, and $\overline{AB} \cong \overline{EF}$. Are the two quadrilaterals congruent?

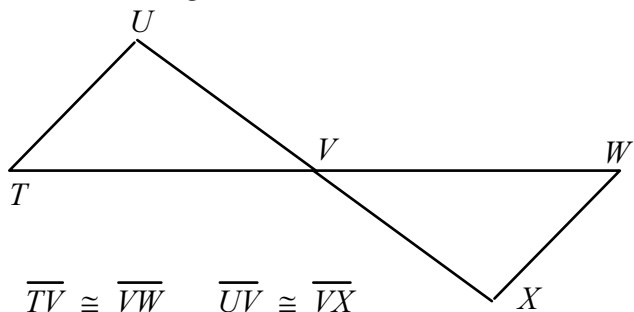
21. Refer to the figure below. Give a congruence statement for two triangles in the figure and name the theorem or postulate that proves the congruence.



22. Refer to the figure shown. Give a congruence statement for the two triangles in the picture and name the theorem or postulate that proves the congruence.



23. Refer to the figure shown. Which of the following statements is true?



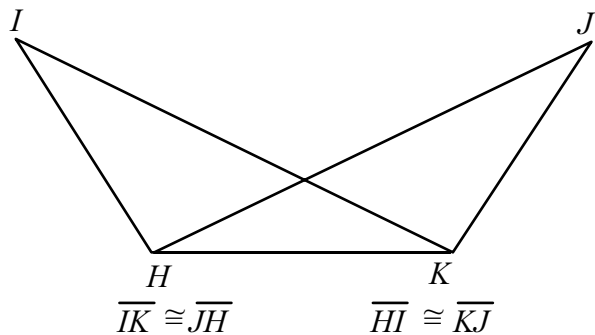
[A] $\triangle TUV \cong \triangle WXV$ by ASA.

[B] $\triangle TUV \cong \triangle VWX$ by SAS.

[C] $\triangle TUV \cong \triangle XWV$ by ASA.

[D] $\triangle TUV \cong \triangle WXV$ by SAS.

24. Refer to the figure below. Which of the following statements is true?



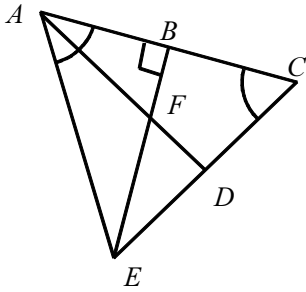
[A] $\triangle HIK \cong \triangle JIK$ by SAS

[B] $\triangle HJK \cong \triangle KIH$ by SSS

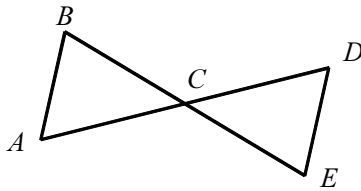
[C] $\triangle HKI \cong \triangle JKI$ by SSS

[D] $\triangle HKI \cong \triangle JKI$ by ASA

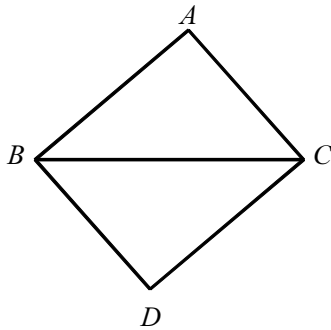
25. Determine which triangles in the figure are congruent by AAS.



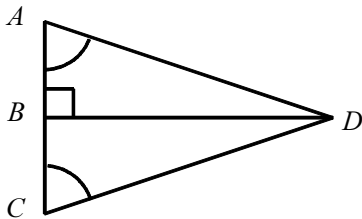
26. $\overline{AC} \cong \overline{DC}$ and $\overline{BC} \cong \overline{CE}$. Prove $\triangle ABC \cong \triangle DEC$.



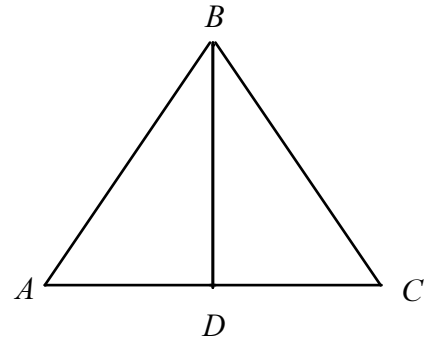
27. Given: $\overline{AB} \cong \overline{DC}$ and $\overline{AC} \cong \overline{DB}$. Prove: $\triangle ABC \cong \triangle DCB$.



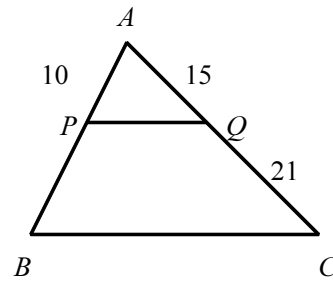
28. $\triangle ABD \cong \triangle CBD$. Write SAS, ASA, AAS, or HL as the reason.



29. Given: \overline{BD} is the median to \overline{AC} ,
 $\overline{AB} \cong \overline{BC}$
 Prove: $\angle C \cong \angle A$

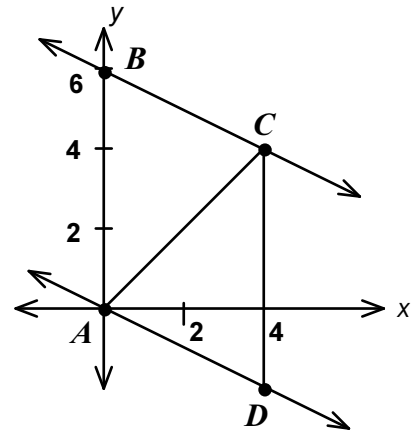


30. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of \overline{AB} .



- [A] 28 [B] 24 [C] 26 [D] 21

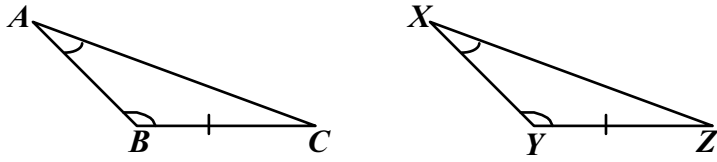
31. Prove that $\triangle ABC \cong \triangle CDA$.



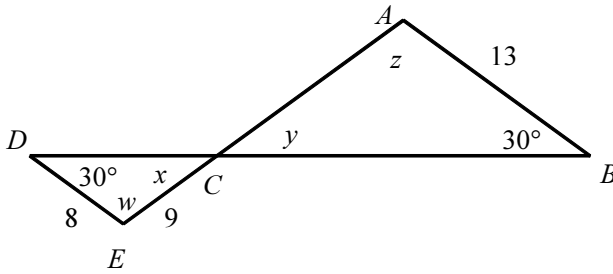
32. Write a two-column proof.

Given: $\angle A \cong \angle X$, $\angle B \cong \angle Y$, $\overline{BC} \cong \overline{YZ}$

Prove: $\triangle ABC \cong \triangle XYZ$

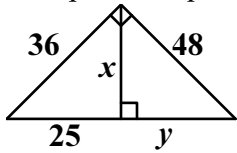


33. Which statement is true for the triangles shown below?



- [A] $m\angle x = 30$ [B] $\frac{CE}{CA} = \frac{CB}{CD}$ [C] $AC = 14.625$ [D] $m\angle z \neq m\angle w$

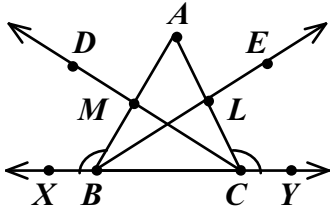
34. Compare the quantity in Column A with the quantity in Column B.



Column A Column B
 x y

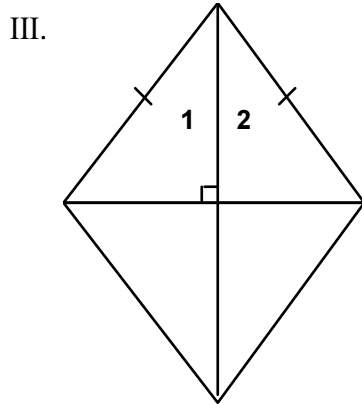
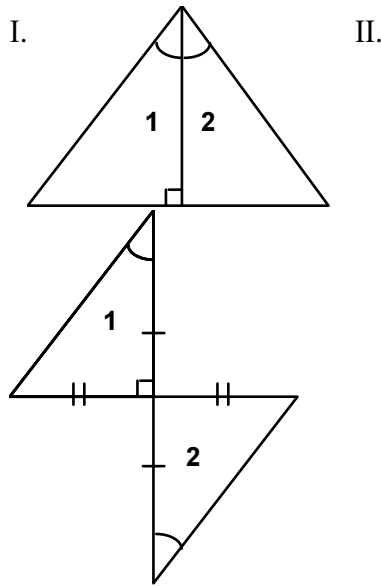
- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

35. \overrightarrow{BE} is the angle bisector of $\angle ABC$ and \overrightarrow{CD} is the angle bisector of $\angle ACB$. Also, $\angle XBA \cong \angle YCA$. Which of the following would you use to prove $\overline{BL} \cong \overline{CM}$?



- [A] SSS [B] SAS [C] ASA [D] HL [E] AAS

36. In which of the following could you efficiently prove $\triangle 1 \cong \triangle 2$ using the HL Theorem?



- [A] I only [B] III only [C] II and III
[D] I and II [E] II only

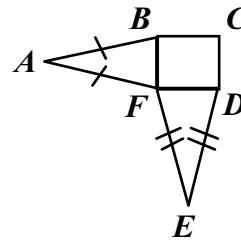
37. The measures of two sides of a triangle are 10 and 15. Use an inequality to express the range of the measure of the third side, m .

- [A] $0 < m < 9$ [B] $1 < m < 17$
[C] $5 < m < 25$ [D] $10 < m < 25$

38. In isosceles trapezoid $JKLM$, leg $JK = 5x + 4$, base $KL = 9x + 8$, and leg $LM = 2x + 6$. Find the value of x .

- [A] $\frac{10}{3}$ [B] $\frac{2}{3}$ [C] -1 [D] $-\frac{2}{7}$

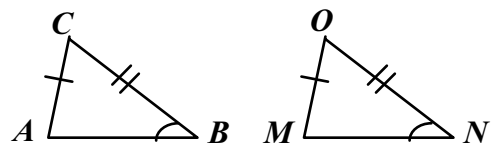
39. $BCDF$ is a square. What additional information do you need to prove $\triangle ABF \cong \triangle EDF$ using ASA?



- I. $\angle ABF \cong \angle EDF$ II. $\overline{AB} \cong \overline{ED}$ III. $\overline{BF} \cong \overline{FD}$ IV. $\angle A \cong \angle E$

- [A] I, II, or IV [B] I only
[C] III and IV [D] II only
[E] III only

40. Compare the quantity in Column A with the quantity in Column B.



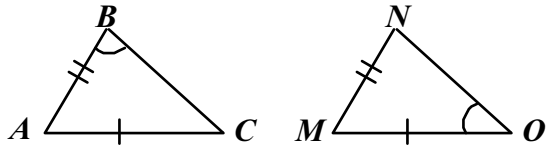
Column A Column B
 AB MN

- [A] The quantity in Column A is greater.
[B] The quantity in Column B is greater.
[C] The two quantities are equal.
[D] The relationship cannot be determined from the information supplied.

41. Which of these lengths could be the sides of a triangle?

- [A] 18 cm, 7 cm, 12 cm
[B] 23 cm, 14 cm, 8 cm
[C] 7 cm, 18 cm, 11 cm
[D] 14 cm, 23 cm, 7 cm

42. Compare the quantity in Column A with the quantity in Column B.

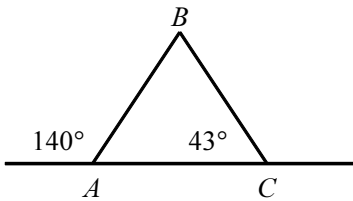


Column A Column B

BC NO

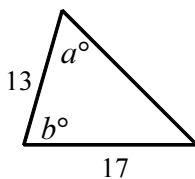
- [A] The quantity in Column A is greater.
 [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

43. Find the largest side of the triangle. (not drawn to scale)



- [A] \overline{AB} [B] \overline{AC}
 [C] \overline{BC} [D] not enough information

44. Compare the quantity in Column A with the quantity in Column B.



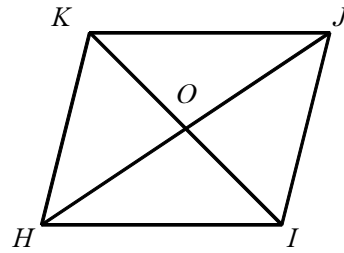
Column A Column B

a b

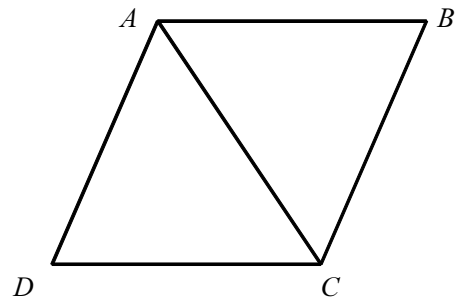
- [A] The quantity in Column A is greater.
 [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

45. Complete the statement for parallelogram $HJKI$. Then state a definition or theorem as the reason.

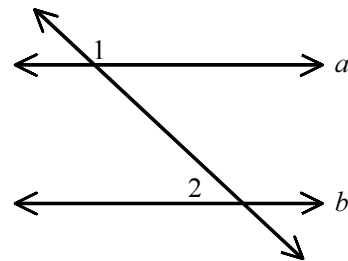
$\overline{HI} \cong$ _____



46. Given: $ABCD$ is a rhombus.
 Prove: $\triangle ABC \cong \triangle CDA$

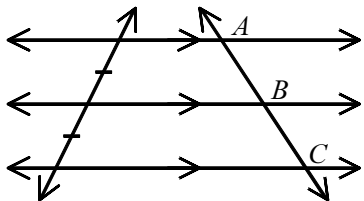


47. What must be the value of x for a to be parallel to b ? $m\angle 1 = 113$ and $m\angle 2 = 3x - 21$



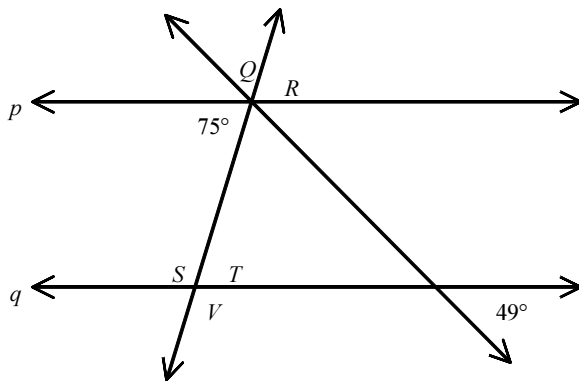
- [A] $\frac{3}{88}$ [B] $\frac{134}{3}$ [C] $\frac{3}{134}$ [D] $\frac{88}{3}$

48. Solve for x in the figure if $AB = 5x + 7$ and $BC = 8x + 8$.



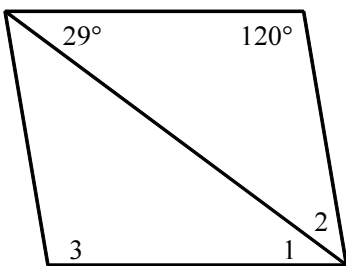
- [A] -3 [B] $\frac{1}{13}$ [C] 13 [D] $-\frac{1}{3}$

49. Which statement is true for the figure below, given that p and q are parallel lines?



- [A] Since $m\angle T = 75$, $m\angle S = 115$ [B] $m\angle V = m\angle R$
 [C] Since $m\angle T = 75$, $m\angle Q = 56$ [D] None of these statements is true.

50. Find the measures of the numbered angles in the parallelogram.

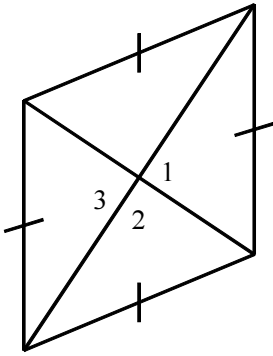


- [A] $m\angle 1 = 29$; $m\angle 2 = 31$; $m\angle 3 = 120$ [B] $m\angle 1 = 29$; $m\angle 2 = 14.5$; $m\angle 3 = 151$
 [C] $m\angle 1 = 14.5$; $m\angle 2 = 60$; $m\angle 3 = 151$ [D] $m\angle 1 = 31$; $m\angle 2 = 29$; $m\angle 3 = 120$

51. In quadrilateral $MNOP$, $\angle M \cong \angle N$. Quadrilateral $MNOP$ could be a
 I. trapezoid. II. rhombus. III. parallelogram.

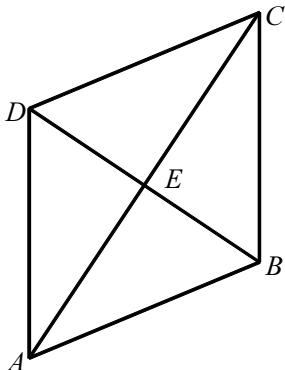
- [A] II or III [B] I only [C] I, II, or III [D] III only [E] I or II

52. Find the value of each variable in the parallelogram. $m\angle 1 = 3x$, $m\angle 2 = x + y$, and $m\angle 3 = 18z$.



- [A] $x = 60, y = 125, z = 5$
 [B] $x = 60, y = 120, z = 10$
 [C] $x = 30, y = 65, z = 0$
 [D] $x = 30, y = 60, z = 5$

53. Given $ABCD$ is a rhombus, $m\angle ABD = 60$, and $CB = 38$. Find the length of \overline{DE} .



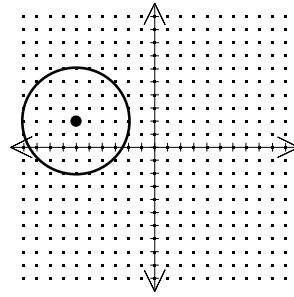
- [A] 23 [B] 16 [C] 19 [D] 24

54. If $m\angle 1 = m\angle 3 = 8x$, $m\angle 2 = 3x - 40$, and $m\angle 4 = x$, find the value of x .



- [A] 140 [B] 70 [C] 40 [D] 20

55. A small messenger company can only deliver in a small part of the city. Write an equation for the boundary where the company delivers, and find its radius.



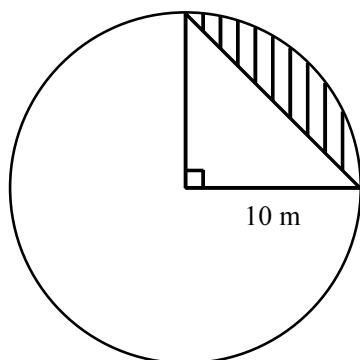
- [A] $(x + 2)^2 + (y - 6)^2 = 32$; $r = 4$ blocks
 [B] $(x + 2)^2 + (y - 6)^2 = 32$; $r = 16$ blocks
 [C] $(x + 6)^2 + (y - 2)^2 = 16$; $r = 16$ blocks
 [D] $(x + 6)^2 + (y - 2)^2 = 16$; $r = 4$ blocks

56. Which pairs of quadrilaterals are congruent?
 I. two squares whose corresponding diagonals are congruent
 II. two rectangles whose corresponding diagonals are congruent
 III. two rhombuses whose corresponding diagonals are congruent
 [A] I only [B] I, II, and III
 [C] I and II [D] II only [E] I and III

57. The diameter of a basketball rim is 18 in. A standard basketball has a circumference 30 in. About how much room is there between the ball and the rim in a shot in which the ball goes in exactly in the center of the rim?
 [A] 9.55 in. [B] 4.78 in. [C] 8.45 in.
 [D] 4.2 in. [E] none of the above

58. A solar energy collector needs several 2-in. by 2-in. square panels to cover an area 13 ft by 4 ft. How many of the square panels are needed?
 [A] 1872 [B] 3744 [C] 208 [D] 156

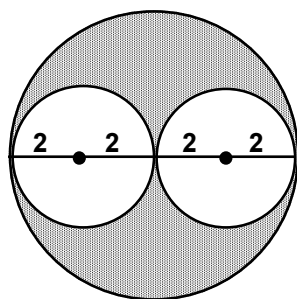
59. Find the area of the shaded segment. Round your answer to the nearest hundredth.



- [A] 28.54 m² [B] 107.08 m² [C] 50 m² [D] 78.54 m²

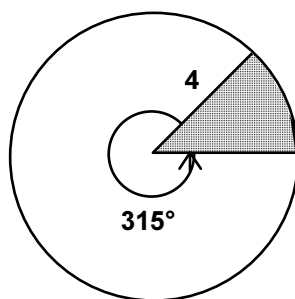
60. Compare the quantity in Column A with the quantity in Column B.

Column A



the shaded area

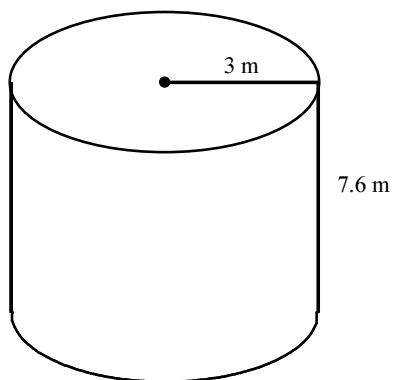
Column B



the shaded area

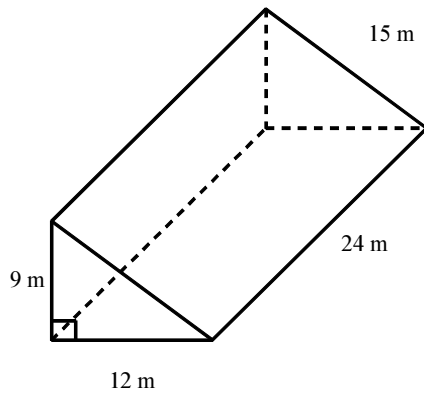
- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

61. Find the surface area of the cylinder to the nearest square unit. (Use $\pi = 3.14$.)



- [A] 200 m² [B] 23 m² [C] 32 m² [D] 100 m²

62. Calculate the surface area of the right triangular prism.



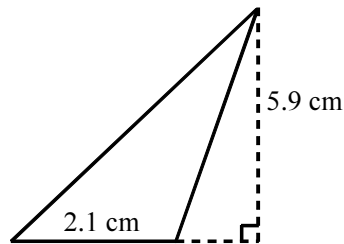
[A] 972 m^2

[B] 864 m^2

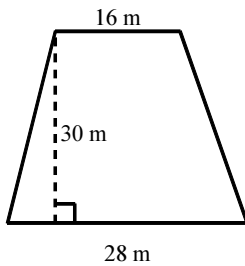
[C] 1296 m^2

[D] 2592 m^2

63. Find the area:



64. Calculate the area of the trapezoid.



65. Find the area of the rectangle with the given base and height.

7 yd 6 in., 3 yd

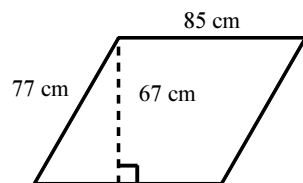
[A] $42 \text{ yd}^2 21 \text{ in.}^2$

[B] $21 \text{ yd}^2 42 \text{ in.}^2$

[C] $21 \text{ yd}^2 648 \text{ in.}^2$

[D] $20 \text{ yd}^2 12 \text{ in.}^2$

66. Find the area:



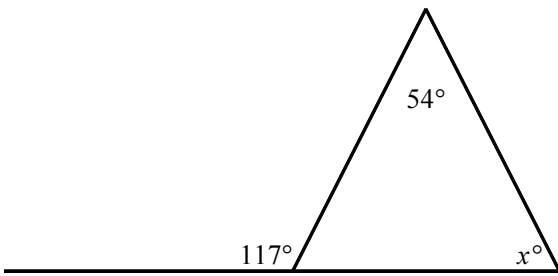
[A] 6120 cm^2

[B] 5427 cm^2

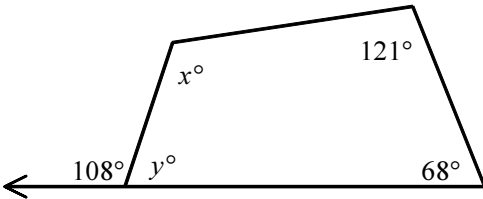
[C] 5695 cm^2

[D] 6545 cm^2

67. Find the value of x .



68. Find x and y .



69. Classify the triangle with sides of length 13, 9, and 16.

- [A] scalene [B] equilateral [C] straight [D] isosceles

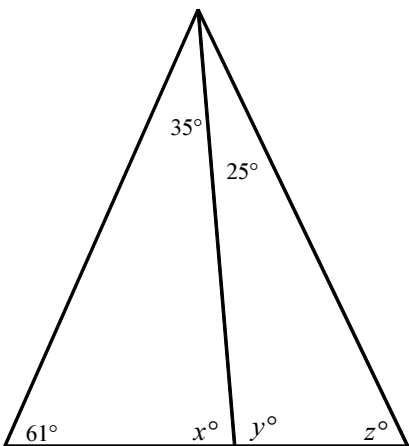
70. Classify the triangle with sides of length 24, 24, and 10.

- [A] straight [B] isosceles [C] equilateral [D] scalene

71. Classify the triangle with angles measuring 120° , 40° , and 20° .

- [A] acute [B] right [C] straight [D] obtuse

72. Find the values of x , y , and z .



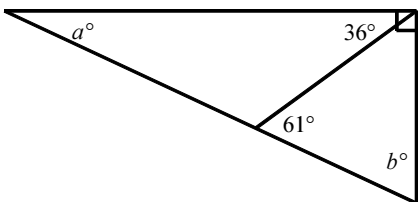
[A] $x = 96, y = 84, z = 59$

[B] $x = 96, y = 84, z = 60$

[C] $x = 84, y = 96, z = 59$

[D] $x = 84, y = 96, z = 60$

73. Find a and b .

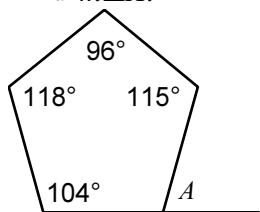


- [A] $a = 54, b = 65$ [B] $a = 25, b = 65$ [C] $a = 25, b = 61$ [D] $a = 54, b = 25$

74. Can a right triangle contain an obtuse angle? Explain.

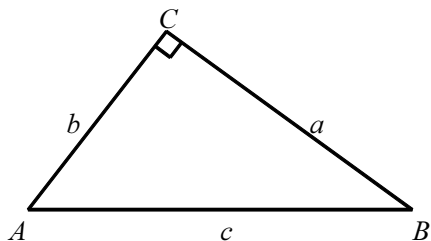
75. A triangle has vertices $A(1, 1)$, $B(5, -1)$, and $C(0, -5)$. Classify the triangle by its sides. Use the Distance Formula to determine the longest side.

76. Find $m\angle A$. [A] 73 [B] 108 [C] 117 [D] 72 [E] 104

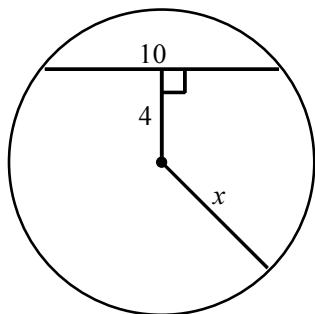


77. Show that a quadrilateral can have at most three obtuse angles.

78. State and prove the Pythagorean Theorem using $\triangle ABC$.



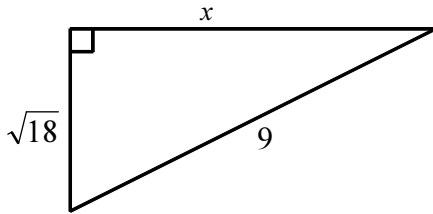
79. Find the value of x to the nearest tenth. [A] 10.8 [B] 6.4 [C] 9.2 [D] 5.1



80. Find the measure, to the nearest tenth, of the diagonal of a rectangle with dimensions 13 cm by 10 cm.

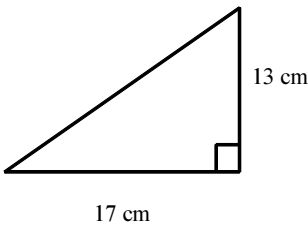
[A] 16.4 cm [B] 4.8 cm
 [C] 17.5 cm [D] 8.3 cm

81. Use the Pythagorean theorem to solve for x .



[A] $\sqrt{63}$ [B] $\sqrt{18}$
 [C] $\sqrt{405}$ [D] $\sqrt{243}$

82. Given the right triangle below, what is the length of the hypotenuse? Round your answer to the nearest tenth.



[A] 11.0 cm [B] 21.4 cm
 [C] 458.0 cm [D] 120.0 cm

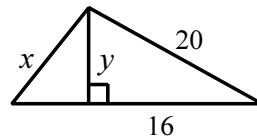
83. Which set of side lengths cannot form a right triangle?

[A] 5 mm, 12 mm, 13 mm
 [B] $\frac{5}{2}$ mm, 6 mm, $\frac{13}{2}$ mm
 [C] 6 mm, 12 mm, 13 mm
 [D] 10 mm, 24 mm, 26 mm

84. A radio station is going to construct a 5-foot tower for a new antenna. The tower will be supported by three cables, each attached to the top of the tower and to points on the roof of the building that are 12 feet from the base of the tower. Find the total length of the three cables.

[A] 52 ft [B] 39 ft [C] 13 ft [D] 65 ft

85. The two small triangles in the following figure are similar. Find the values of x and y to the nearest thousandth.



[A] $x = 15, y = 12$ [B] $x = 9.6, y = 12$
 [C] $x = 32, y = 25.6$
 [D] $x = 12, y = 15$ [E] none of the above

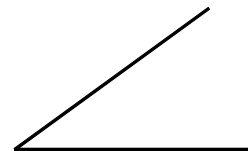
86. A right triangle has a leg with a length of 6 inches and a hypotenuse of 10 inches. What is the length of the third side?

[A] 9 in. [B] 8 in. [C] 6 in. [D] 7 in.

87. Construct a line segment congruent to the given segment.



88. Construct an angle congruent to the given angle.

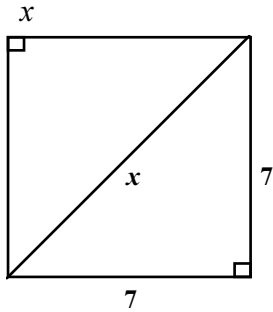


89. Construct a line parallel to the given line and through the given point.

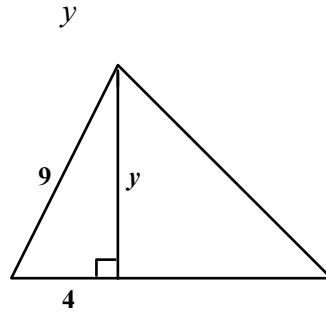


90. Compare the quantity in Column A with the quantity in Column B.

Column A



Column B



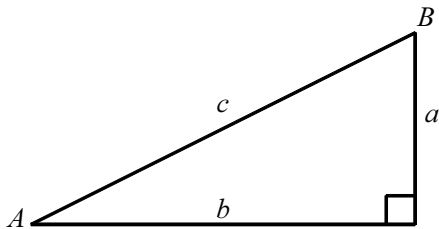
[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

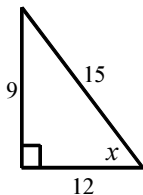
[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

91. Write a ratio for $\tan B$.

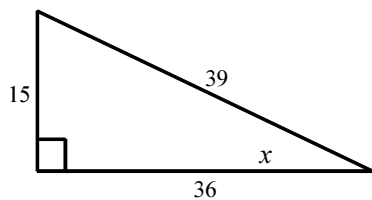


92. Use the diagram to find $\sin x$ as a fraction in simplest form. [A] $\frac{4}{5}$ [B] $\frac{3}{5}$ [C] $1\frac{1}{3}$ [D] $\frac{3}{4}$



93. Use special right triangles to find the coordinates of the point of intersection of the angle 120° and the unit circle. Express your answer in fractions and radicals when necessary.

94. Use the diagram to find the $\tan x$ as a fraction in simplest form.



- [A] $\frac{5}{12}$ [B] $\frac{5}{13}$ [C] $\frac{12}{13}$ [D] $2\frac{2}{5}$

95. Describe how you would choose whether to use sine, cosine, or tangent to find the length of the side of a right triangle given the measure of one angle and the length of one leg or the hypotenuse.

96. $\triangle XYZ$ is a right triangle with a right angle at Y . Which of the following is true?

- [A] $\sin X = \frac{XY}{XZ}$ [B] $\sin X = \frac{YZ}{XZ}$ [C] $\tan X = \frac{XY}{ZY}$ [D] $\sin Z = \frac{YZ}{XZ}$ [E] $\cos Z = \frac{XY}{XZ}$

97. In right triangle $\triangle ABC$, $\sin A = \frac{1}{2}$. What is $\cos A$?

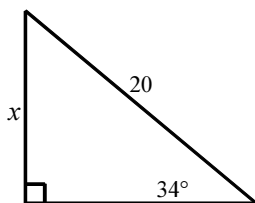
- [A] $\frac{\sqrt{3}}{2}$ [B] $\frac{1}{2}$ [C] $\frac{\sqrt{2}}{2}$ [D] $\frac{\sqrt{3}}{3}$ [E] none of the above

98. A slide 5.5 m long makes an angle of 34° with the ground. How high is the top of the slide above the ground?

99. To find the height of a pole, a surveyor moves 110 feet away from the base of the pole and then, with a transit 3 feet tall, measures the angle of elevation to the top of the pole to be 38° . What is the height of the pole? Round answer to the nearest foot.

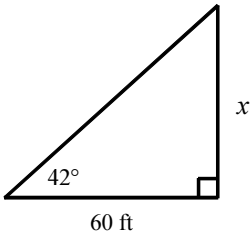
- [A] 86 ft [B] 89 ft [C] 144 ft [D] 141 ft

100. What is x to the nearest hundredth?

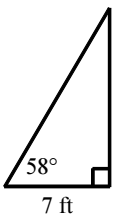


- [A] $x = 16.58$ [B] $x = 11.18$ [C] $x = 29.65$ [D] $x = 13.49$

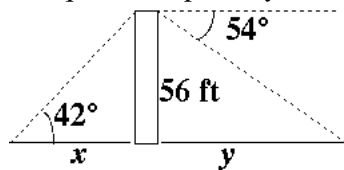
101. A photographer shines a camera light at a particular painting forming an angle of 42° with the camera platform. If the light is 60 feet from the wall with the painting, how high above the platform is the painting?



- [A] 1.11 ft [B] 54.02 ft [C] 0.9 ft [D] 66.64 ft
102. A large totem pole near Kalama, Washington is 112 ft tall. On a particular day at noon it casts a 183-ft shadow. What is the sun's angle of elevation at that time?
- [A] 52.3° [B] 58.5° [C] 37.7° [D] 31.5°
103. Liola drives 14 km up a hill that is at a grade of 13° . What horizontal distance, to the nearest tenth of kilometer, has she covered?
- [A] 3.1 km [B] 13.6 km [C] 12.6 km [D] 3.2 km
104. A ladder leans against a building forming an angle of 58° with the ground. The base of the ladder is 7 feet from the building. Use the cosine to determine the length of the ladder.



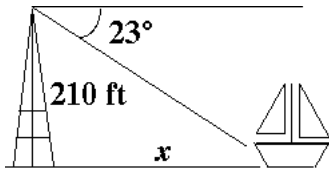
- [A] 13.21 ft [B] 8.25 ft [C] 13.6 ft [D] 11.2 ft
105. Compare the quantity in Column A with the quantity in Column B.



Column A Column B
 x y

- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

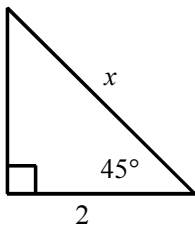
106. Which two trigonometric equations could be used to find x ?



- [A] $\sin 23^\circ = \frac{210}{x}$, $\tan 23^\circ = \frac{x}{210}$
 [B] $\tan 67^\circ = \frac{210}{x}$, $\tan 23^\circ = \frac{x}{210}$
 [C] $\tan 23^\circ = \frac{210}{x}$, $\tan 67^\circ = \frac{x}{210}$
 [D] $\sin 23^\circ = \frac{210}{x}$, $\cos 67^\circ = \frac{x}{210}$
 [E] $\cos 23^\circ = \frac{210}{x}$, $\sin 67^\circ = \frac{x}{210}$
107. In a 30° - 60° - 90° triangle, the length of the side opposite the 30° angle is 5 mi. Find the length of the side opposite the 60° angle, and the length of the hypotenuse.

108. The length of the hypotenuse of a 30° - 60° - 90° triangle is 18 m. Find the length of the side opposite the 30° angle.

109. Solve for x .



110. In $\triangle ABC$, $\angle A$ is a right angle and $m\angle B = 45$. If $AB = 11$ feet, find AC .

- [A] 11 ft [B] 15.556 ft
 [C] 9.526 ft [D] 19.053 ft

111. Which of the following *cannot* be the lengths of a 30° - 60° - 90° triangle?

- [A] 8, 16, $8\sqrt{3}$ [B] $5, \frac{5}{2}, 5\sqrt{3}$
 [C] $\frac{4}{3}, \frac{8}{3}, \frac{4}{3}\sqrt{3}$ [D] $\frac{9}{2}, 9, \frac{9}{2}\sqrt{3}$

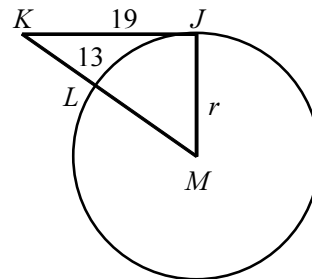
112. The shorter leg of a 30° - 60° - 90° triangle is 9.4 inches long. Find the perimeter.

- [A] 41.49 in. [B] 53.17 in.
 [C] 44.48 in. [D] 65.13 in.

113. The area of a square is 200 cm^2 . How long is the diagonal?

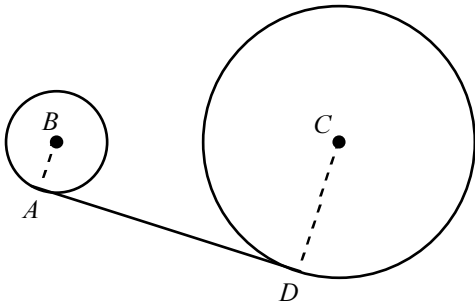
- [A] 14.1 cm [B] 20 cm
 [C] 141.4 cm [D] 28.2 cm
 [E] none of the above

114. \overline{KJ} is tangent to $\odot M$ at J (not drawn to scale). Find the length of the radius r , to the nearest tenth.



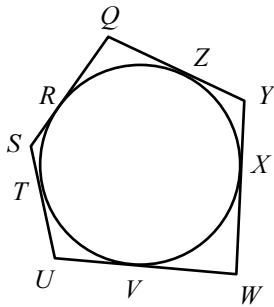
- [A] 23.0 [B] 14.8 [C] 6.1 [D] 7.4

115. \overline{AD} is tangent to both circles in the figure (not drawn to scale). If $BA = 9$, $AD = 22$, and $CD = 13$, find the length of \overline{BC} to the nearest tenth.



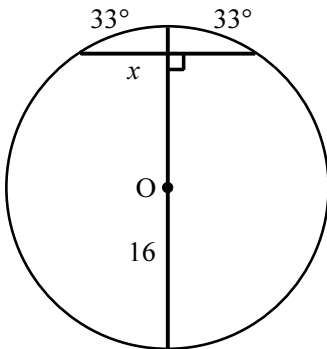
- [A] 31.1 [B] 23.8 [C] 13.6 [D] 22.4

116. The circle is circumscribed by the pentagon as shown (not drawn to scale). If $QZ = 9$, $YX = 7$, $XW = 12$, $UW = 15$, and $SU = 16$, find the perimeter of the pentagon.



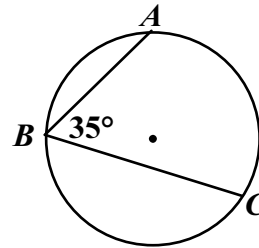
- [A] 118 [B] 128 [C] 78 [D] 88

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



- [A] 10.4 [B] 8.7 [C] 13.4 [D] 4.5

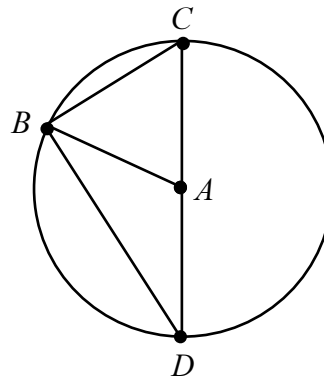
118. Compare the quantity in Column A with the quantity in Column B.



<u>Column A</u>	<u>Column B</u>
AB	BC

- [A] The quantity in Column A is greater.
 [B] The quantity in Column B is greater.
 [C] The two quantities are equal.
 [D] The relationship cannot be determined on the basis of the information supplied.

- 119.



Use the circle above. Classify $\triangle BAD$.

- [A] scalene [B] none of these
 [C] right [D] isosceles