Honors Geometry Questions (Ch. 1-6)

Name _____

_____1. What is the midpoint of a line that has endpoints at (0, 3) and (6, -1)?
A. (12, 2) B. (3, 1) C. (12, -5) D. (3, 2)

_____2. If X is the midpoint of $\overline{CN}$ and CX = 2n – 10, what is CN?
A. n – 5 B. 4n – 20 C. 4n D. 40

_____3. If C is between X and Y with CX = 8n – 4 and CY = 2n + 10, what is XY?
A. 6n – 6 B. 6n – 14 C. 10n + 6 D. 10n – 6

_____4. What is the midpoint of a line that has endpoints at (-2, -3) and (8, -1)?
A. (6, -4) B. (6, -2) C. (3, -2) D. (-6,-4)

_____5. If B is the midpoint of $\overline{AC}$ and AC = 8n – 2, what is AB?
A. 4n – 1 B. 16n – 4 C. 4n – 2 D. 16n + 4

_____6. If C is between X and Y with XY = 6n – 4 and CY = n + 1, what is CX?
A. 5n – 3 B. 5n – 5 C. 7n – 3 D. 7n – 5

_____7. What are the measures of two complementary angles if the difference of their measures is $8°$?
A. 39, 51 B. 76, 84 C. 86, 94 D. 41, 49

_____8. What are the measures of two supplementary angles if the difference of their measures is $8°$?
A. 39, 51 B. 76, 84 C. 86, 94 D. 41, 49

_____9. If $\angle A$ and $\angle B$ are complementary angles with $\angle A = 80°$, what is $\angle B$?
A. $10°$ B. $20°$ C. $100°$ D. $120°$

_____10. If $\angle A$ and $\angle B$ are supplementary angles with $\angle A = 80°$, what is $\angle B$?
A. $10°$ B. $20°$ C. $100°$ D. $120°$

_____11. A is at (-1, 2) and B is at (3, 8). What are the coordinates of the midpoint of $\overline{AB}$?
A. (1, 4) B. (1, 5) C. (2, 5) D. (2, 4)

_____12. If the radius of a circle is 20 cm, what is the circumference? (Ignore units)
A. 20π B. 40π C. 80π D. 400π

_____13. What is the area of a circle with a radius of 6 cm? (Ignore units)
A. 6π B. 12π C. 18π D. 36π

_____14. What is the perimeter of a square with an area of 25 cm^2?
A. 20 cm B. 25 cm C. 50 cm D. 625 cm

_____15. $\overrightarrow{BX}$ bisects $\angle ABC$. If $\angle ABX = 30°$, what is $\angle ABC$?
A. $15°$ B. $30°$ C. $60°$ D. $120°$

_____16. Which of these statements is false?

A. $\overleftrightarrow{AB} = \overleftrightarrow{BA}$ B. $\overline{AB} = \overline{BA}$ C. $\overrightarrow{AB} = \overrightarrow{BA}$ D. All are true.

_____17. Which description best describes a stop sign?

A. a regular convex octagon B. an irregular concave octagon
C. a regular concave octagon D. an irregular convex octagon

_____18. Which equation would be perpendicular to the $y = -\frac{1}{7}x + 3$?

A. $y = -\frac{1}{7}x - 3$ B. $y = \frac{1}{7}x + 3$ C. y = 7x – 5 D. None of the above

_____19. If you walk 12 miles due East and then 16 miles due South, how far are you from your starting point?

A. 20 miles B. 24 miles C. 28 miles D. 36 miles

_____20. If you walk 35 miles due North and then 48 miles due West, rounded to the nearest mile how far are you from your starting point?

A. 13 miles B. 33 miles C. 59 miles D. 61 miles

_____21. If the diagonal distance of a rectangle is 97 cm and one of the sides is 65 cm, what is the other side length?

A. 71 cm B. 72 cm C. 117 cm D. 118 cm

_____22. How many planes does a dice have?

A. 6 B. 4 C. 0 D. 8

_____23. If three points all lie on a line, the points are said to be what?

A. segment bisectors B. coplanar
C. derivatives D. collinear

_____24. If $\angle A$ and $\angle B$ are vertical angles with $\angle A = 2n + 60$ and $\angle B = 4n + 20$, what is the measurement of $\angle B$?

A. 10 B. 20 C. 80 D. 100

_____25. If $\angle A$ and $\angle B$ are a linear pair with $\angle A = n + 40$ and $\angle B = 9n + 20$, what is the measurement of $\angle A$?

A. 22 B. 12 C. 52 D. 42

_____26. If $\angle A$ and $\angle B$ are vertical angles with $\angle A = n + 60$ and $\angle B = 2n + 10$, what is the measurement of $\angle A$?

A. 110 B. 80 C. 20 D. None of the above

_____27. If two angles are vertical angles, the sum of their measures is 180 degrees.

A. True B. False

_____28. Complementary angles add up to 180 degrees.

A. True B. False

For 29-31 consider the statement "If you are nice, you have a lot of friends."

_____29. If you have a lot of friends, then you are nice is the ___ of above.
A. Converse B . Inverse C. Contrapositive D. Sublimation

_____30. If you are not nice, you don't have a lot of friends is the ____ of above.
A. Converse B . Inverse C. Contrapositive D. Sublimation

_____31. If you don't have a lot of friends, then you are not nice is the ____ of above.
A. Converse B . Inverse C. Contrapositive D. Sublimation

_____32. Consider the statement: "If an angle is 90 degrees, it is a right angle." Is the converse of this statement true or false?
A. True B. False

_____33. Consider the statement: "If you live in Radford, you live in Virginia." Is the contrapositive of this statement true or false?
A. True B. False

_____34. The converse of all dogs like to chase cats is that some dogs like to chase cats.
A. True B. False

_____35. The inverse of "if you are old, you have a big head" is
" if you don't have a big head, then you are not old."
A. True B. False

_____36. The converse of all bald men are funny looking is no bald men are funny looking.
A. True B. False

_____37. The contrapositive of "if you have a dog, you like cats" is
"if you don't like cats, you love dogs."
A. True B. False

_____38. "If you like dogs, you like cats" is represented by $p \rightarrow q$. What would be the symbolic representation of "if you don't like cats, you like dogs"?
A. $\sim p \rightarrow q$ B. $p \rightarrow \sim q$ C. $\sim q \rightarrow p$ D. $\sim q \rightarrow \sim p$

_____39. "If you have a laptop, then you have a computer" is represented by $p \rightarrow q$. What is the symbolic representation of "If you have a computer, then you don't have a laptop"?
A. $q \rightarrow p$ B. $p \rightarrow \sim q$ C. $\sim q \rightarrow p$ D. $q \rightarrow \sim p$

_____40. If $p \rightarrow q$, and $q \rightarrow r$, then
A. $r \rightarrow p$ B. $p \rightarrow r$ C. $\sim r \rightarrow p$ D. $r \rightarrow \sim p$

_____41. Let p represent $\sqrt{11} = z$, and let q represent z is a rational number. What is a symbolic representation of the statement:
"If $\sqrt{11} = z$, then z is not a rational number"?
A. $q \rightarrow p$ B. $p \rightarrow \sim q$ C. $\sim q \rightarrow p$ D. $q \rightarrow \sim p$

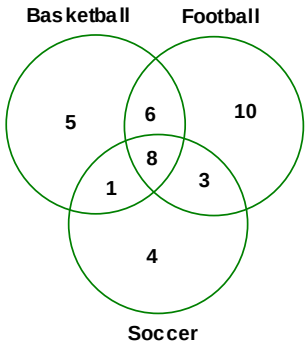
_____42. If AB = 6 and AB + BC = 10, then 6 + BC = 10 demonstrates what property?
A. Subtraction B. Addition C. Substitution D. Symmetric

_____43. If AB – NP = BC – NP, then AB = BC demonstrates what property?
A. Subtraction B. Addition C. Substitution D. Symmetric

_____44. If $\angle 1 + \angle 2 = 90$ and $\angle 2 = \angle 5 + \angle 6$, then $\angle 1 + \angle 5 + \angle 6 = 90$.
A. Substitution B. Addition C. Symmetric D. Calcitration

_____45. If AB + BC = XY + BC, then AB = XY demonstrates what property?
A. Subtraction B. Addition C. Substitution D. Symmetric

Consider this Venn diagram.



_____46. According to the Venn diagram, how many are on the soccer team?
A. 11 B. 16 C. 4 D. 9

_____47. According to the Venn diagram, how many are playing all 3 sports at the same time?
A. 1 B. 8 C. 18 D. 20

_____48. According to the Venn diagram, how many play football and basketball at the same time?
A. 9 B. 8 C. 33 D. 14

_____49. In my class, everyone plays either golf or tennis. 14 play golf and 8 play tennis. If 3 play both tennis and golf, how many kids are in my class?
A. 17 B. 19 C. 22 D. 25

_____50. I have a total of 14 kids. If 10 of my kids play soccer and 12 play tennis, how many play both tennis and soccer?
A. 2 B. 4 C. 8 D. 10

_____51. There are 30 kids who play either soccer or baseball. 4 of the 30 kids play both soccer and baseball. If the soccer team has 18 members, how many kids are on the baseball team?
A. 12 B. 16 C. 20 D. 26

_____52. There are 14 kids in band and 16 in chorus. If 4 of these kids are in both chorus and band, how many total kids are in either band or chorus?
A. 26 B. 28 C. 30 D. 34

Figure 1

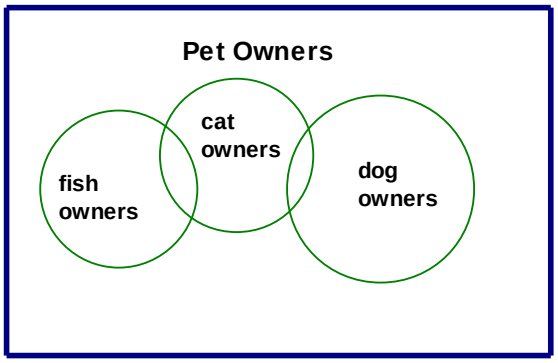
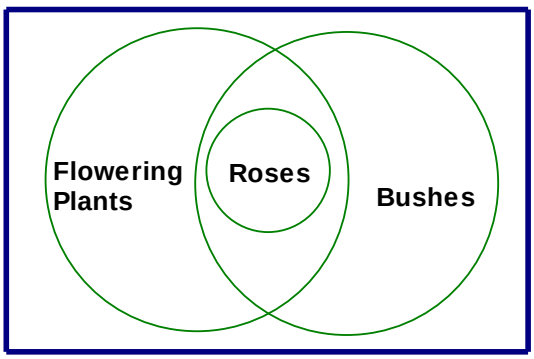


Figure 2



_____53. In Figure 1 above, which is a valid conclusion?
A. No cat owners also own dogs.
B. No fish owners also own cats.
C. No dog owners also own fish.
D. No pet owner owns more than one pet.

_____54. In Figure 2 above, which statement is true?
A. No bushes are flowering plants.
B. No roses are bushes.
C. Some flowering plants are bushes.
D. Some roses are not flowering plants.

_____55. If lines are parallel, then alternate interior angles are equal.
A. True B. False

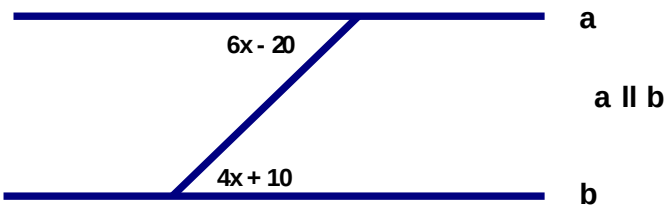
_____56. If lines are parallel, then corresponding angles add up to 180°.
A. True B. False

_____57. Vertical angles are equal.
A. True B. False

_____58. If lines are parallel, consecutive interior angles are equal.
A. True B. False

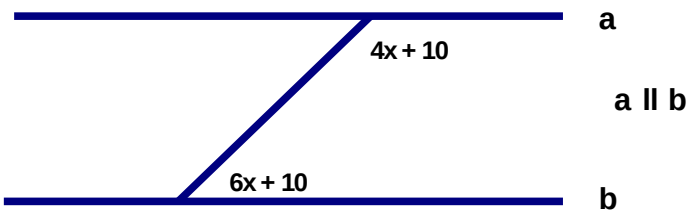
_____59. The sum of the angles in a triangle is 360°.
A. True B. False

_____60. What is the value of x in the figure below?
A. 15° B. 16° C. 19° D. 21°



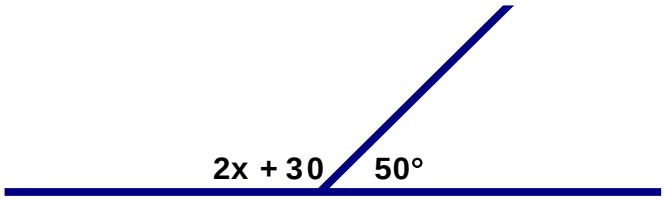
_____61. What is the value of x in the figure below?

A. 15° B. 16° C. 19° D. 0°

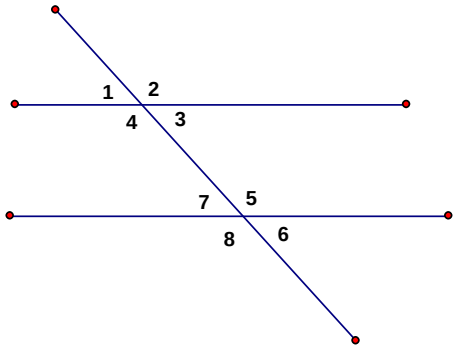


_____62. What is the value of x in the figure below?

A. 10° B. 15° C. 50° D. 60°



Look at the figure below and identify the given.



_____63. the alternate interior angle to angle $\angle 7$

A. $\angle 1$ B. $\angle 3$ C. $\angle 4$ D. $\angle 5$

_____64. the corresponding angle to angle $\angle 2$

A. $\angle 1$ B. $\angle 3$ C. $\angle 4$ D. $\angle 5$

_____65. the consecutive interior angle to $\angle 5$

A. $\angle 1$ B. $\angle 3$ C. $\angle 4$ D. $\angle 7$

_____66. In $\Delta ABC, \angle A = 3n, \angle B = 5n - 30, \angle C = 2n + 10$. What is the measurement of $\angle A$?

A. 20° B. 40° C. 60° D. 80°

_____67. Give the equation in slope intercept form that goes through (2, 7) and has a slope of 4.

A. y = 4x – 26 B. y = 4x + 1 C. y = -4x +15 D. y = 4x – 1

_____68. What would be the slope of the line that is perpendicular to y = 5x + 4?

A. 5 B. -5 C. $\frac{1}{5}$ D. $-\frac{1}{5}$

_____69. Give the equation in slope intercept form that goes through (2, 4) and is parallel to the line y = 5x – 3.

A. y = 5x + 3 B. y = -5x +12 C. $y = -\frac{1}{5}x + 12$ D. y = 5x – 6

_____70. Give the equation in slope intercept form that goes through (3, 4) and (5, 10).

A. y = 3x – 4 B. y = -3x + 13 C. y = 3x – 5 D. $y = \frac{1}{3}x + 3$

_____71. In $\Delta ABC, \angle A = 3n, \angle B = 5n - 30, \angle C = 2n + 10$. What is the measurement of $\angle A$?

A. 20° B. 40° C. 60° D. 80°

_____72. If ΔABC is an isosceles triangle with AB = BC, which statement must be true?

A. $\angle C = \angle B$ B. $\angle A = \angle B$ C. $\angle A = \angle C$ D. AC = BC

_____73. In ΔCWH which angle is opposite $\overline{CH}$?

A. $\angle C$ B. $\angle P$ C. $\angle H$ D. $\angle W$

_____74. If in ΔCWH, CW = WH and WH = CH, what is the measurement of $\angle W$?

A. 40° B. 60° C. 80° D. Not possible to know

_____75. If $\Delta ABC \cong \Delta XYZ$, which of the following must be true?

A. $\angle A = \angle Z$ B. AC = XY C. XZ = BC D. None of the above

_____76. If ΔABC is an isosceles triangle with AC = BC and $\angle A = 40°$, what is $\angle B$?

A. 40° B. 70° C. 80° D. None of the above

_____77. If $\Delta ABC \cong \Delta XYZ$, AB = 38, YZ = 28, and XY = 5x + 8, what is the value of x?

A. 30 B. 20 C. 6 D. 4

_____78. If $\Delta RST \cong \Delta HIJ, \angle R = 97°, \angle J = 37°,$ and $\angle S = 4x + 14$, what is the value of x?

A. 10 B. 32 C. 46 D. 8

_____79. Which of the following does not prove congruency?

A. ASA B. SSA C. SSS D. All prove congruency

_____80. If in ΔCWH, $\angle W = \angle H$ what can you conclude?

A. CW = WH B. CH = CW C. CH = WH D. $\angle C = 100°$

Figure 1

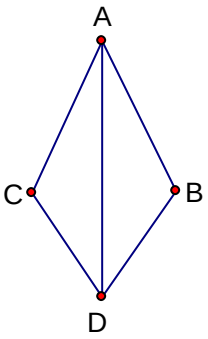


Figure 2

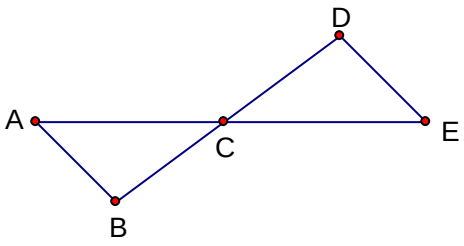


Figure 3

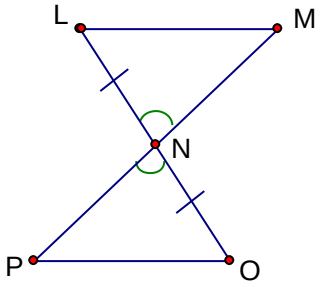


Figure 4

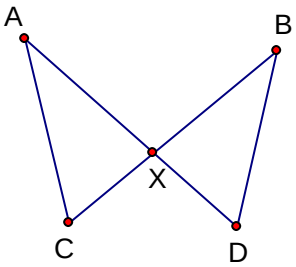


Figure 5

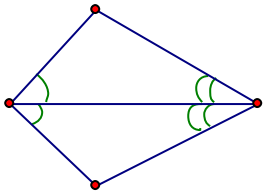
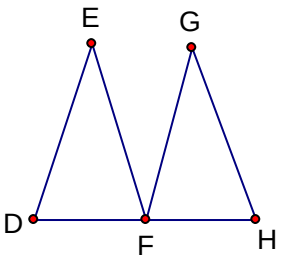


Figure 6



_____81. In figure 1 above, what postulate would be used to prove that $\Delta ABD \cong \Delta ACD$ if $\overline{AC} \cong \overline{AB}$ and $\overline{CD} \cong \overline{BD}$?

A. ASA B. SAS C. SSS D. AAS

_____82. In figure 2 above, $\overline{AE}$ and $\overline{BD}$ bisect each other at point C. What postulate would be used to prove that $\Delta ABC \cong \Delta EDC$?

A. ASA B. SAS C. SSS D. AAS

_____83. In figure 3 above, what additional information is needed to prove that ΔMNL is congruent to ΔPNO by SAS?

A. PN = MN B. PO = LM C. PO = NM D. NM = NO

_____84. In figure 4 above, AX = BX and CX = DX. What postulate would be used to prove that $\Delta AXC \cong \Delta BXD$?

A. ASA B. SAS C. SSS D. AAS

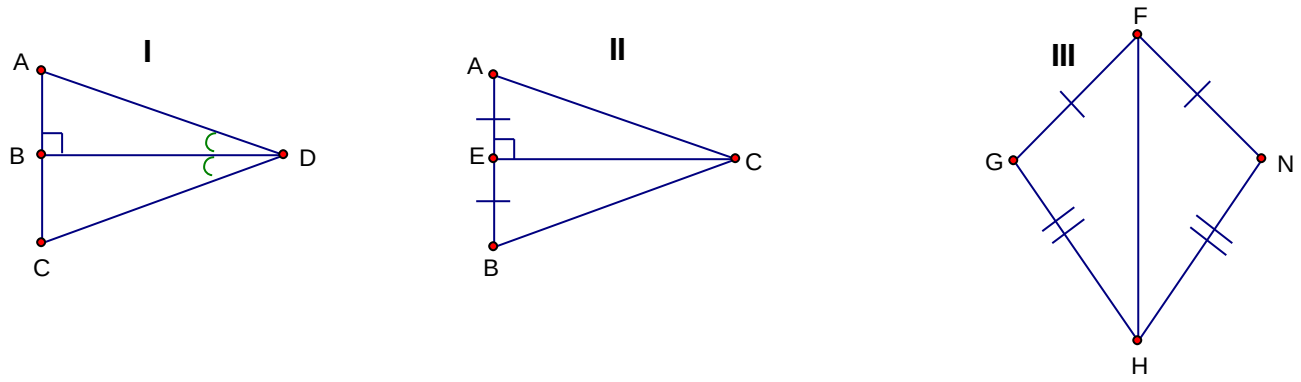
_____85. In figure 5 above, what postulate would be used to prove that the triangles are congruent?

A. ASA B. SAS C. SSS D. AAS

_____86. In figure 6 above, which statement below does **NOT** necessarily describe the triangles shown if $\Delta DEF \cong \Delta FGH$?

A. $\Delta EDF \cong \Delta GFH$ C. $\Delta EFD \cong \Delta GHF$

B. $\Delta FED \cong \Delta HGF$ D. $\Delta FDE \cong \Delta FHG$

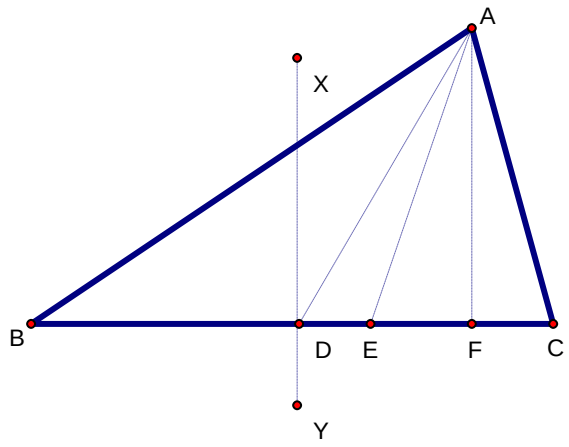


_____87. In picture I above, what allows you to immediately conclude that $\Delta ABD \cong \Delta CBD$?
A. ASA B. SAS C. AAA D. SAA

_____88. In picture II above, what allows you to immediately conclude that $\Delta AEC \cong \Delta BEC$?
A. ASA B. SAS C. AAA D. SAA

_____89. In picture III above, what allows you to immediately conclude that $\Delta FGH \cong \Delta FNH$?
A. SSS B. SAS C. AAA D. SAA

_____90. What does the symbol $\cong$ mean?
A. similar B. equal to C. congruent D. approximately



In the figure above, BD = CD, $\angle XDC = \angle AFC = 90°$, and $\angle BAE = \angle CAE$.

_____91. What is $\overline{AD}$ in the triangle above?
A. median B. perpendicular bisector C. altitude D. angle bisector

_____92. What is $\overline{AE}$ in the triangle above?
A. median B. perpendicular bisector C. altitude D. angle bisector

_____93. What is $\overline{XD}$ in the triangle above?
A. median B. perpendicular bisector C. altitude D. angle bisector

_____94. What is $\overline{AF}$ in the triangle above?
A. median B. perpendicular bisector C. altitude D. angle bisector

_____95. Which of the measurements below could be the measurements of a triangle?
A. 3, 4, 9 B. 2, 8, 10 C. 3, 7, 9 D. 6, 8, 16

_____96. If two sides of a triangle are 6 cm and 8 cm, what must be true about the third side?
A. $2 \le m < 14$ B. $2 < m < 14$ C. $2 > m > 14$ D. $2 \le m \le 14$

_____97. In ΔABC $\angle A = 2x,\ \angle B = x + 60,$ and $\angle C = 2x + 20$. Which side is the longest?
A. $\overline{AB}$ B. $\overline{BC}$ C. $\overline{AC}$ D. $\angle A$

_____98. In ΔABC, AB = 10 cm, BC = 8 cm, and AC = 7 cm. In ΔXYZ, XY = 8 cm, YZ = 9 cm, and XZ = 10 cm. What must be true?
A. $\angle X > \angle A$ B. $\angle X > \angle B$ C. $\angle Y > \angle A$ D. $\angle Y > \angle B$

_____99. In ΔABC, A = (2, 4), B = (3, 7) and C = (6, 3). What angle is largest?
A. $\angle A$ B. $\angle B$ C. $\angle C$ D. None of these

_____100. In ΔRST $\angle R = 4x + 20,\ \angle S = 5x,$ and $\angle T = x + 60$. Choose the list of sides of ΔRST that are ordered correctly from longest to shortest.
A. $\overline{TR}, \overline{RS}, \overline{ST}$ B. $\overline{ST}, \overline{RS}, \overline{TR}$ C. $\overline{RS}, \overline{ST}, \overline{TR}$ D. $\overline{ST}, \overline{TR}, \overline{RS}$

_____101. In ΔRST $\angle R = 60,\ \angle S = 2x + 40,$ and $\angle T = x + 20$. Choose the list of sides of ΔRST that are ordered correctly from longest to shortest.
A. $\overline{TR}, \overline{ST}, \overline{RS}$ B. $\overline{ST}, \overline{RS}, \overline{TR}$ C. $\overline{RS}, \overline{ST}, \overline{TR}$ D. $\overline{ST}, \overline{TR}, \overline{RS}$

_____102. In ΔRST $\angle R = x + 10,\ \angle S = x + 5,$ and $\angle T = 3x - 35$. Choose the list of sides of ΔRST that are ordered correctly from longest to shortest.
A. $\overline{RS}, \overline{ST}, \overline{TR}$ B. $\overline{ST}, \overline{RS}, \overline{TR}$ C. $\overline{TR}, \overline{RS}, \overline{ST}$ D. $\overline{ST}, \overline{TR}, \overline{RS}$

Figure A

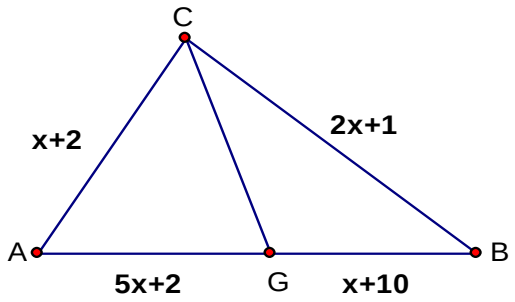
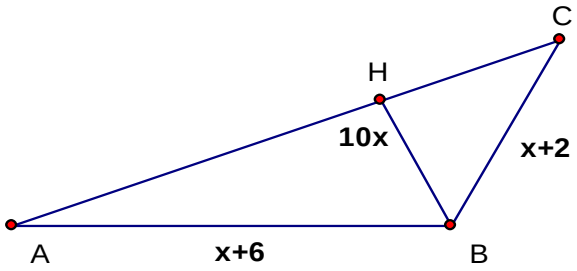


Figure B



_____103. If $\overline{CG}$ is a median of ΔABC in figure A above, what is BC?
A. 2 B. 4 C. 5 D. None of the above

_____104. If $\overline{BH}$ is an altitude of ΔABC in figure B above, what is BC?
A. 8 B. 9 C. 11 D. None of the above

_____105. Two sides of a triangle are 4 cm and 10 cm. What is a possible measurement of the third side?
A. 8 cm B. 2 cm C. 15 cm D. 14 cm

_____106. In ΔABC, $\angle A = 59°, \angle B = 60°,$ and $\angle C = 61°$. What side is longest?

A. $\overline{AB}$ B. $\overline{AC}$ C. $\overline{CB}$ D. $\angle C$

_____107. In ΔABC, AB = 13 cm, BC = 12 cm, and AC = 16 cm. What angle is smallest?

A. $\angle A$ B. $\angle B$ C. $\angle C$ D. None of the above

_____108. Which below is a possible measurement for an isosceles triangle?

A. 4, 4, 8 B. 7, 7, 13 C. 2, 2, 5 D. 1, 1, 2

_____109. If $\Delta ABC \cong \Delta XYZ, \angle A = 40°, \angle C = 80°$, what is the measurement of $\angle X$?

A. 40° B. 70° C. 80° D. 60°

_____110. If ABCD is a parallelogram with $\angle A = 7x$ and $\angle B = 3x - 20$, what is the measurement of $\angle C$?

A. 20° B. 40° C. 80° D. 140°

_____111. If ABCD is an isosceles trapezoid with $\angle A = 50°$, what is $\angle C$?

A. 50° B. 100° C. 130° D. 140°

_____112. Which of the following is not always true about a parallelogram?

A. the diagonals bisect each other B. opposite sides are equal in length
C. opposite angles are equal D. diagonals are perpendicular

_____113. Opposite angles are not always congruent in a

A. rhombus B. parallelogram C. trapezoid D. rectangle

_____114. $\overline{NO}$ is the base of isosceles trapezoid NRPO. If $\angle N = 4x + 10$ and $\angle O = 6x + 4$, what is the value of x?

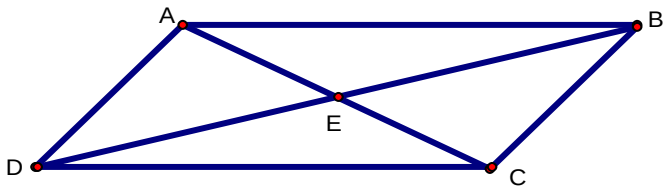
A. 2 B. 3 C. 16.6 D. 18.2

_____115. If ABCD is an isosceles trapezoid with AB = CD, $\angle B$ is congruent to

A. $\angle A$ B. $\angle C$ C. $\angle D$ D. $\angle X$

_____116. Diagonals are always perpendicular in a

A. parallelogram B. trapezoid C. rhombus D. rectangle



_____117. If AE = 4n – 8, DE = 2n + 6, and CE = n + 4 in the parallelogram above, what is the value of n?

A. -2 B. 2 C. 4 D. 7

_____118. If $\angle ADC = 80°$ in the parallelogram above, what is $\angle DCB$?

A. 40° B. 80° C. 100° D. 120°

_____119. If in the parallelogram above DC = 3n + 20, BC = n + 10, and AB = 4n – 10, what is n?

A. -5 B. $6\frac{2}{3}$ C. 30 D. None of the above

_____120. What of the following could be a fourth point in a parallelogram if three of the points are (0, 0), (6, 0) and (3, 4)?

A. (9, 4) B. (6, 4) C. (4, 6) D. (4, 9)

_____121. Which is the equation that has a slope of 2 and goes through the point (1, 9).

A. y = 2x + 7 B. y = 2x – 9 C. y = 2x + 9 D. y = 2x – 1

_____122. Which equation below is perpendicular to y = ½ x – 7?

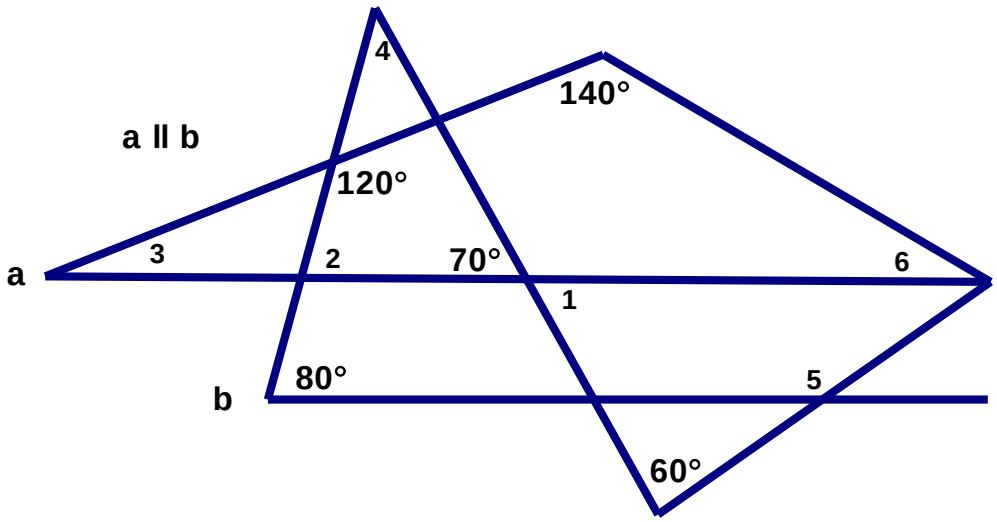
A. y = 2x + 7 B. y = -2x – 1 C. y = ½ x + 7 D. y = x + 1

_____123. Let p and q be p: $\angle A$ is acute q: $\angle B$ is acute
What would represent "$\angle A$ is acute or $\angle B$ is acute"?

A. $p \wedge q$ B. $p \vee q$ C. $p \leftrightarrow q$ D. $p \rightarrow q$

_____124. Assume the following: p: $\angle A$ is acute q: $\angle B$ is acute n: $\angle C$ is obtuse
What would represent "If $\angle C$ is obtuse, then $\angle A$ is acute and $\angle B$ is acute."?

A. $n \rightarrow p \wedge q$ B. $n \rightarrow p \vee q$ C. $p \rightarrow n \wedge q$ D. $p \rightarrow n \vee q$



_____125. What is the measurement of $\angle 1$ above?

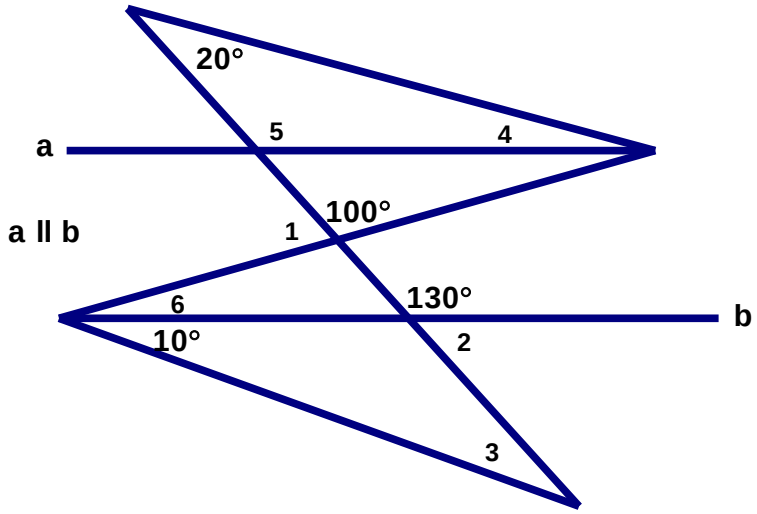
A. 20° B. 30° C. 70° D. 80°

_____126. What is the measurement of $\angle 3$ above?

A. 20° B. 30° C. 70° D. 80°

_____127. What is the measurement of $\angle 6$ above?

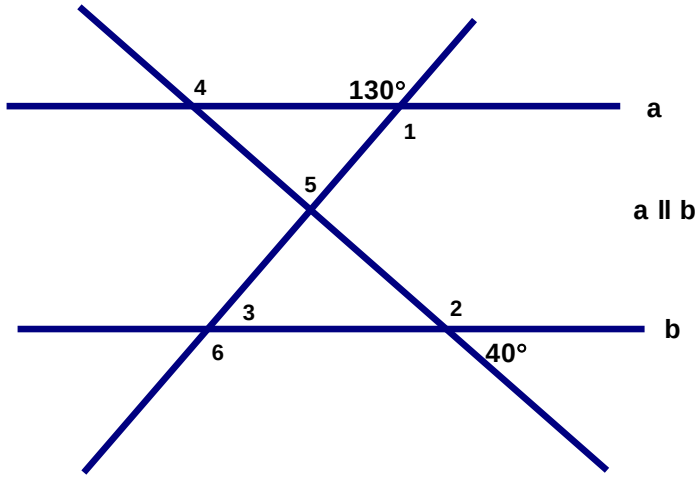
A. 20° B. 30° C. 70° D. 80°



_____128. What is the measurement of ∠1 above?
A. 80° B. 30° C. 40° D. 50°

_____129. What is the measurement of ∠3 above?
A. 80° B. 30° C. 40° D. 80°

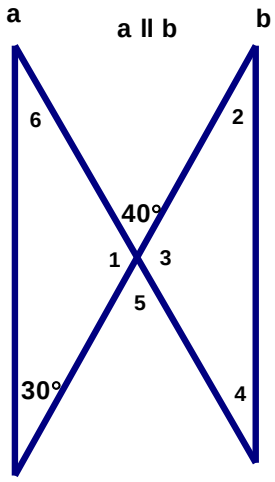
_____130. What is the measurement of ∠6 above?
A. 80° B. 30° C. 40° D. 80°



_____131. What is the measurement of ∠2 above?
A. 140° B. 130° C. 90° D. 50°

_____132. What is the measurement of ∠3 above?
A. 80° B. 30° C. 40° D. 50°

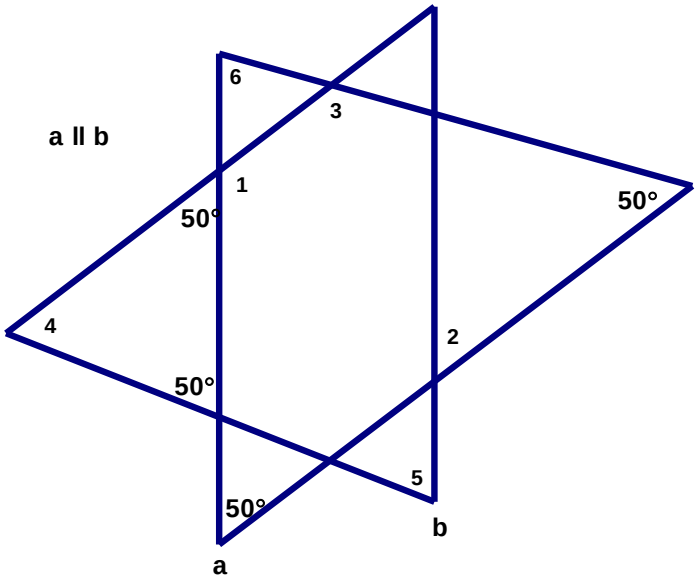
_____133. What is the measurement of ∠5 above?
A. 80° B. 90° C. 100° D. 70°



_____134. What is the measurement of ∠1 above?
A. 140° B. 40° C. 30° D. 10°

_____135. What is the measurement of ∠4 above?
A. 140° B. 40° C. 30° D. 10°

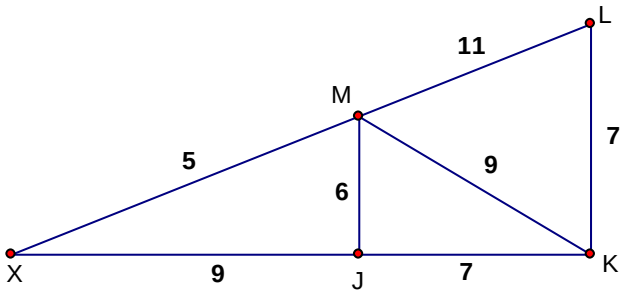
_____136. What is the measurement of ∠6 above?
A. 140° B. 40° C. 30° D. 10°



_____137. What is the measurement of ∠4 above?
A. 80° B. 130° C. 40° D. 50°

_____138. What is the measurement of ∠2 above?
A. 80° B. 130° C. 40° D. 50°

_____139. What is the measurement of ∠6 above?
A. 80° B. 130° C. 40° D. 50°



_____140. When comparing $\angle JMK$ and $\angle MJX$ above, what is true?

A. $\angle JMK > \angle MJX$ B. $\angle JMK < \angle MJX$

C. $\angle JMK = \angle MJX$ D. It cannot be determined

_____141. In ΔABC $\angle A = 8x + 12$, $\angle B = 15x - 40$, and $\angle C = 10x + 10$.
Determine the longest side of ΔABC.

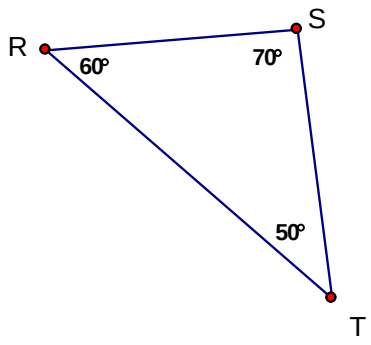
A. $\overline{AB}$ B. $\overline{AC}$ C. $\overline{CB}$ D. $\angle A$

_____142. What equation would be perpendicular to y = 2x + 5

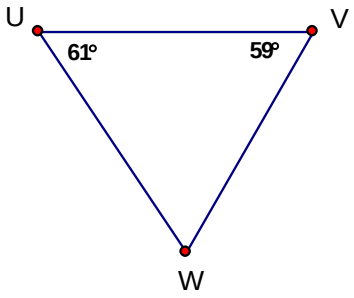
A. y = -x – 5 B. y = -2x – 5 C. y = $-\frac{1}{2}$x – 5 D. y = $\frac{1}{2}x$ - 5

_____143. What is the distance from (1, 5) to (7, 6)?

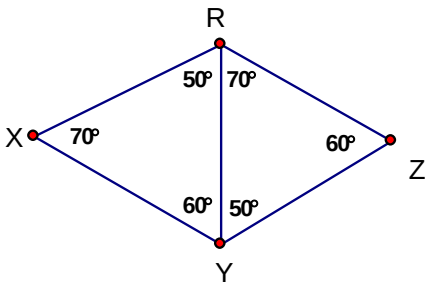
A. $\sqrt{37}$ B. $\sqrt{23}$ C. $\sqrt{24}$ D. None of the above



I



II



III

_____144. Which side is longest in figure I above?

A. $\overline{RT}$ B. $\overline{ST}$ C. $\overline{RS}$ D. Not possible

_____145. Which side is longest in figure II above?

A. $\overline{UV}$ B. $\overline{VW}$ C. $\overline{UW}$ D. Not possible

_____146. Which side is longest in figure III above?

A. $\overline{RX}$ B. $\overline{RZ}$ C. $\overline{RY}$ D. $\overline{ZY}$

_____147. If BCDE is congruent to OPQR, then $\overline{DE}$ is congruent to _____?

A. $\overline{PR}$ B. $\overline{PQ}$ C. $\overline{QR}$ D. $\overline{OP}$

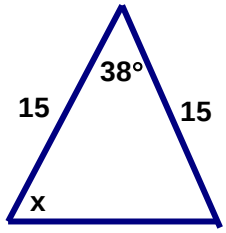


Figure 1

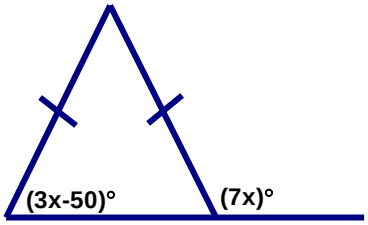


Figure 2

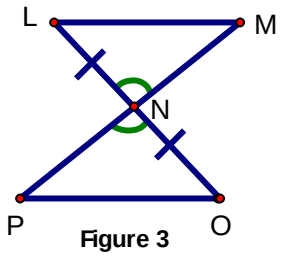


Figure 3

_____148. In figure 1 above, what is the value of x?

A. 15 B. 38 C. 71 D. 142

_____149. In figure 2 above, what is the value of x?

A. 40 B. 13 C. 23 D. None of the above

_____150. What additional information is needed to prove that ΔMNL is congruent to ΔPNO by ASA?

A. $\overline{MN} \cong \overline{PN}$ B. $\overline{ML} \cong \overline{PO}$ C. $\angle L \cong \angle O$ D. $\angle M \cong \angle P$

_____151. Which below is an example of the transitive property?

A. If $\angle A = \angle B$ and $\angle C = \angle D$, then $\angle A = \angle D$

B. If $\angle A = \angle B$ and $\angle C = \angle D$, then $\angle B = \angle D$

C. If $\angle A = \angle B$ and $\angle B = \angle D$, then $\angle A = \angle D$

D. None of the above

_____152. Line a and line b are perpendicular to each other. If line a has a slope of 4, what is the slope of line b?

A. 4 B. -4 C. $\frac{1}{4}$ D. $-\frac{1}{4}$

_____153. If $\Delta ABC \cong \Delta ERT$ with AB = 10, BC = 13, $\angle A = 39°$, and $\angle R = 88°$, what is RT?

A. 39° B. 88° C. 10 D. 13

Figure 1

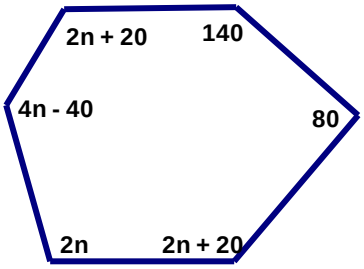


Figure 2

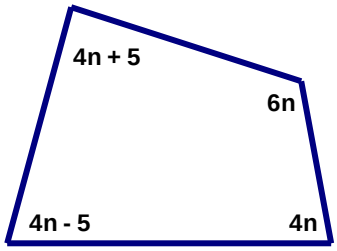
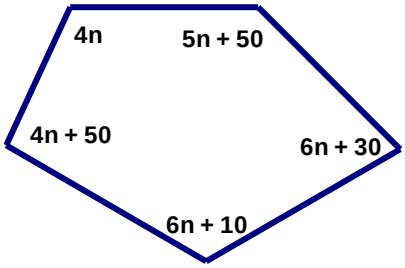


Figure 3



_____154. What is the value of n in figure 1 above.
A. 16 B. 20 C. 25 D. 50

_____155. What is the value of n in figure 2 above.
A. 16 B. 20 C. 25 D. 50

_____156. What is the value of n in figure 3 above.
A. 16 B. 20 C. 25 D. 50

_____157. Which equation below would be perpendicular to y = ½ x – 4?
A. y = 2x – 4 B. y = -2x + 7 C. y = ½ x + 4 D. y = 8x + 4

_____158. Below are the measurements of the lengths of the side of a square.
Which measurement would make the area of the square equal the perimeter of the square?
A. 2 B. 3 C. 4 D. 10

_____159. What measurement below for $\angle A$ and $\angle B$ would make the angles vertical angles and at the same time possibly consecutive interior angles?
A. 40° B. 45° C. 90° D. 145°

_____160. Who was Mr. Hickam's favorite college professor when he was at Hampden-Sydney?
A. Albert Einstein B. Martha Stewart C. Eminem D. Lee Cohen

_____161. Which of the following quadrilaterals could have diagonals that are congruent but do not bisect each other?
A. rhombus B. rectangle C. trapezoid D. parallelogram

_____162. In which of the following do the diagonals bisect the angles?
A. rhombus B. rectangle C. trapezoid D. parallelogram

_____163. If ABCD is a parallelogram with $\angle A = x$ and $\angle D = 2x - 3$, what is the value of x?
A. 3 B. 31 C. 61 D. 121

_____164. Opposite angles are always congruent in a(n)
A. trapezoid B. quadrilateral C. parallelogram D. isosceles trapezoid

_____165. Not all rectangles have _____.
A. diagonals that bisect each other C. four congruent sides
B. diagonals that are congruent D. consecutive angles that are supplementary.

_____166. Which of the following is NOT true of parallelograms?
A. The opposite sides are congruent
B. The opposite angles are congruent
C. Consecutive angles are complementary
D. The diagonals bisect each other

_____167. What is D in parallelogram ABCD if A = (0, 0), B = (7, 0), and C = (9, 4)?
A. (2, 4) B. (9, -3) C. (16, 4) D. (9, 11)

_____168. What is D in parallelogram ABCD if A = (0, 0), B = (15, 0), and C = (13, 4)?
A. (13, 19) B. (28, 4) C. (-2, 4) D. (13, -11)

_____169. If ABCD is a parallelogram with $\angle A = 7x$ and $\angle B = 3x - 20$, what is the measurement of $\angle C$?
A. 10° B. 40° C. 70° D. 140°

_____170. If ABCD is an isosceles trapezoid with $\angle A = 32°$, what is $\angle C$?
A. 32° B. 64° C. 146° D. 148°

_____171. Which of the following is NOT always true about a parallelogram?
A. the diagonals bisect each other
B. opposite angles are equal
C. opposite sides are equal in length
D. diagonals are perpendicular

_____172. Opposite angles are NOT always congruent in a
A. rhombus B. parallelogram C. trapezoid D. rectangle

_____173. Diagonals are always perpendicular in a
A. parallelogram B. trapezoid C. rhombus D. rectangle

_____174. If two sides of a triangle have the measurements of 3 and 7, what could the third leg be?
A. $4 < m > 10$ B. $4 \leq m \leq 10$ C. $4 < m < 10$ D. None of the above

_____175. If two sides of a triangle have the measurements of 8 and 7, what could the third leg be?
A. $1 < m < 15$ B. $1 \leq m \leq 15$ C. $7 < m < 8$ D. None of the above

_____176. If two sides of a triangle have the measurements of 9 and 9, what could the third leg be?
A. $1 < m < 18$ B. $0 < m \leq 18$ C. $0 < m < 9$ D. None of the above

_____177. If two sides of a triangle have the measurements of 1 and 1, what could the third leg be?
A. $1 < m < 1$ B. $0 > m < 2$ C. $0 < m < 2$ D. None of the above

_____178. In ΔABC A = (3, 4), B = (2, -1), and C = (9, 2). Which angle is largest?
A. $\angle A$ B. $\angle B$ C. $\angle C$ D. It can't be determined.

_____179. In ΔABC A = (4, 1), B = (6, 8), and C = (7, 3). Which angle is largest?
A. $\angle A$ B. $\angle B$ C. $\angle C$ D. It can't be determined.

_____180. What is the distance from (9, 8) to (7, 10)?
A. $\sqrt{5}$ B. $\sqrt{8}$ C. $\sqrt{10}$ D. $\sqrt{12}$

_____181. If a circle has a diameter of 28 cm, what is its area?
A. 14π B. 28π C. 56π D. 196π

_____182. If a circle has a diameter of 28 cm, what is its circumference?
A. 14π B. 28π C. 56π D. 196π

_____183. Which below is the symbol for the word "therefore"?
A. ≈ B. ≅ C. Δ D. ∴

_____184. Which below is the symbol for approximately?
A. ≈ B. ≅ C. Δ D. ∴

_____185. Which below is the symbol congruency?
A. ≈ B. ≅ C. Δ D. ∴

Figure 1

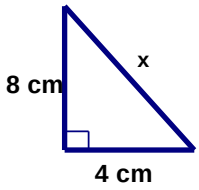


Figure 2

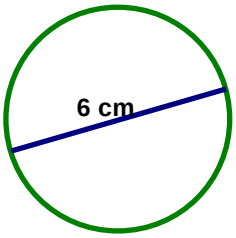


Figure 3

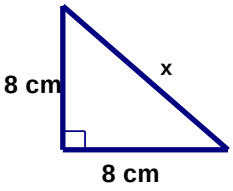


Figure 4

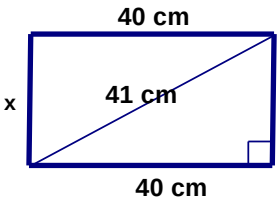
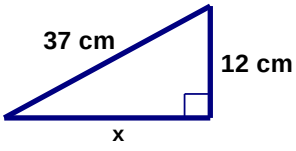


Figure 5



_____186. What is the value of x in figure 1 above? (Round answer to the nearest tenth.)
A. 8.9 B. 9.9 C. 10.9 D. 11.9

_____187. What is the area of figure 2 above? (Round answer to the nearest tenth.)
A. 18.8 cm^2 B. 28.3 cm^2 C. 37.7 cm^2 D. 113.1 cm^2

_____188. What is the value of x in figure 3 above?
A. 8.9 B. 11.3 C. 12.3 D. 14.2

_____189. What is the value of x in figure 4 above?
A. 8 B. 9 C. 11 D. 15

_____190. What is the value of x in figure 5 above?
A. 33.9 B. 35 C. 37 D. 38.9

Figure 1

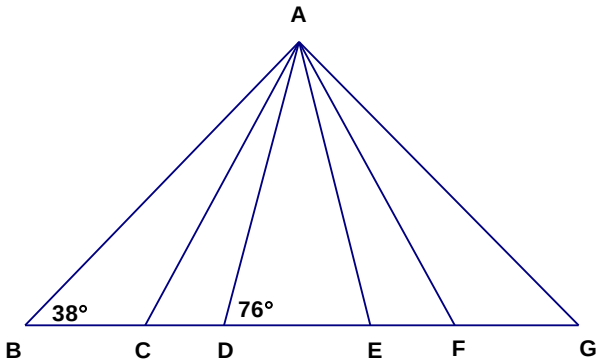


Figure 2

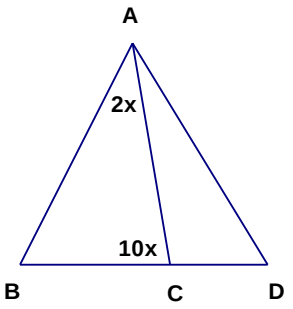
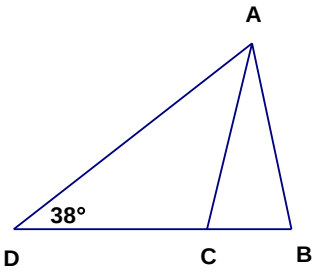


Figure 3



_____191. In figure 1 above, ΔABG and ΔDAE are isosceles triangles and ΔCAF is an equilateral triangle. Find the measurement of $\angle EAF$.

A. 14° B. 16° C. 18° D. 40°

_____192. In figure 2 above, what is the measurement of $\angle CAD$ if ΔABD is an equilateral triangle?

A. 16° B. 24° C. 40° D. 46°

_____193. In figure 3 above, AB = AC = DC. What is the measurement of $\angle CAB$?

A. 15° B. 28° C. 34° D. 38°

_____194. If the area of a circle is 1017.88 cm^2, what is the circle's circumference?

A. 56.5 cm B. 100.5 cm C. 113.1 cm D. 131.9 cm

_____195. How many sides does a dodecagon have?

A. 9 B. 10 C. 12 D. 15

_____196. Let A = (7, 8), B = (9, 13), and C = (14, 14). How far is it to go from A to C and then to B?

A. 10.5 B. 12.4 C. 14.3 D. 15.6

_____197. B is between A and C. AB = 2n, BC = n + 11, and AC = 44. What is the numerical length of AB?

A. 18 B. 22 C. 24 D. 26

_____198. Rounding to the nearest whole number, what is the perimeter of a triangle with the following vertices: (2, 2) (4, 6) (3, 10)

A. 17 B. 18 C. 20 D. 22

_____199. In ΔABC, X is the midpoint of $\overline{AB}$, Y is the midpoint of $\overline{BC}$, and Z is the midpoint of $\overline{AC}$. A = (2, 5) B = (10, 15) C = (18, 17) What is XY?

A. 9 B. 10 C. 12 D. 13

_____200. A right triangle has a hypotenuse of 13 cm and its area is 30 cm. What is the perimeter of the right triangle?

A. 18 B. 22 C. 24 D. 30

_____201. All of the points in this problem are collinear.
B is the midpoint of $\overline{AC}$. X is the midpoint of $\overline{AB}$.
Y is the midpoint of $\overline{BC}$. D is the midpoint of $\overline{XB}$.
F is the midpoint of $\overline{DB}$. If DF = 2cm, what is AC?
A. 24 B. 28 C. 30 D. 32

_____202. Assume the statement $p \rightarrow r$.
What is the converse of the inverse of the contrapositive of this statement?
A. $p \rightarrow r$ B. $p \rightarrow \sim r$ C. $\sim p \rightarrow r$ D. $r \rightarrow p$

_____203. In a class of 28 students, 20 students are studying French, 12 students are studying Spanish and 8 are studying both French and Spanish.
How many students in this class are studying neither French nor Spanish?
A. 4 B. 6 C. 8 D. 10

_____204. Give the equation of the line that goes through the point (2, 3) and is perpendicular to the line that goes through the points (1, 4) and (7, 5).
A. y = -6x + 12 B. y = -6x + 15 C. y = 6x + 12 D. y = 6x + 15

_____205. ΔABC is a right isosceles triangle with A located at the point (2, 3) and $\angle CAB = 90°$.
If AB = 6 and AC = 6, what is BC? (Round answer to the nearest tenth.)
A. 6.5 B. 7.2 C. 7.8 D. 8.5

Figure 1

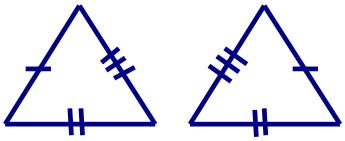


Figure 2

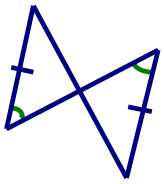
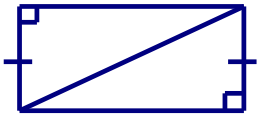


Figure 3

Figure 4



_____206. In figure 1 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. SSS E. Not able to be proven

_____207. In figure 2 above, what postulate would prove congruency?
A. SSS B. SAS C. ASA D. AAS E. Not able to be proven

_____208. In figure 3 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____209. In figure 4 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. SSS E. Not able to be proven

Figure 1

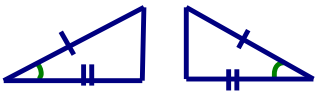


Figure 2

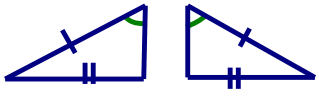


Figure 3

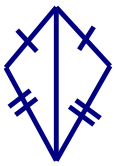


Figure 4

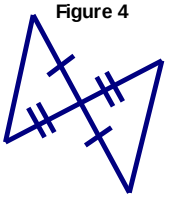


Figure 5

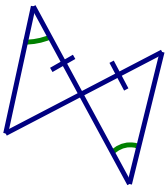


Figure 6

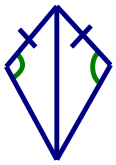


Figure 7

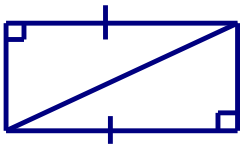


Figure 8

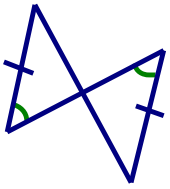


Figure 9

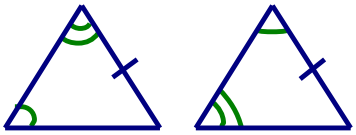


Figure 10

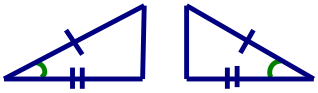
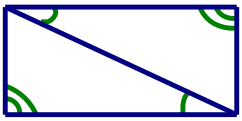


Figure 11



_____210. In figure 1 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____211. In figure 2 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____212. In figure 3 above, what postulate would prove congruency?
A. HL B. SSS C. ASA D. AAS E. Not able to be proven

_____213. In figure 4 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____214. In figure 5 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____215. In figure 6 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____216. In figure 7 above, what postulate would prove congruency?
A. HL B. SSS C. ASA D. AAS E. Not able to be proven

_____217. In figure 8 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____218. In figure 9 above, what postulate would prove congruency?
A. SSS B. SAS C. ASA D. AAS E. Not able to be proven

_____219. In figure 10 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven

_____220. In figure 11 above, what postulate would prove congruency?
A. HL B. SAS C. ASA D. AAS E. Not able to be proven