

2013-14 Geometry Midterm Questions

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 $\angle A = 80^\circ$, what is $\angle B$?
A. 10° B. 20° C. 100° D. 120°
- _____10. If $\angle A$ and $\angle B$ are supplementary angles with $\angle A = 80^\circ$, 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. How many sides does a hexagon have?
A. 5 B. 6 C. 7 D. 10
- _____13. If $AB = \sqrt{5}$ where A = (2, 0) and B = (4, y), what could the value of y be?
A. 1 B. 2 C. 5 D. 6
- _____14. If B is between A and C on \overline{AC} with $AB = 4n - 2$ and $BC = 2n - 2$, what is AC?
A. $2n - 4$ B. $2n$ C. $6n$ D. $6n - 4$

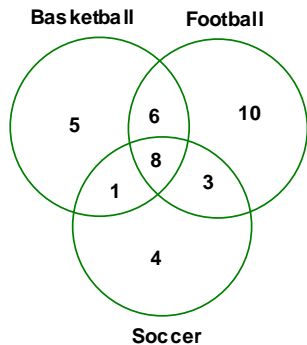
- _____15. \overline{BX} bisects $\angle ABC$. If $\angle ABX = 30^\circ$, what is $\angle ABC$?
 A. 15° B. 30° C. 60° D. 120°
- _____16. Which of these statements is false?
 A. $\overline{AB} = \overline{BA}$ B. $\overline{AB} = \overline{BA}$ C. $\overline{AB} = \overline{BA}$ D. All are true.
- _____17. Which of triangle measurements below is a right triangle?
 A. 2, 4, 7 B. 6, 8, 10 C. 11, 12, 13 D. 12, 14, 16
- _____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

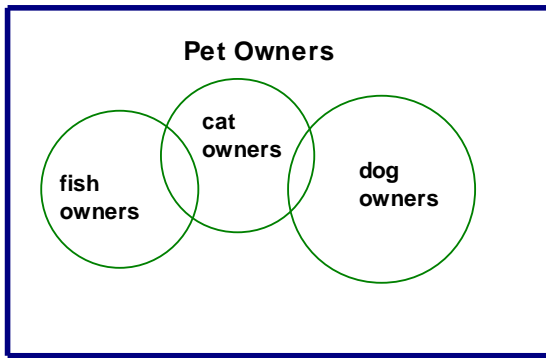
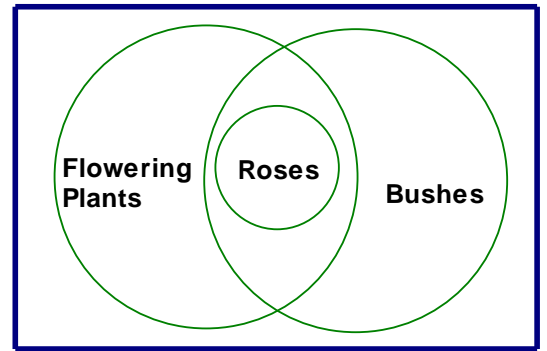
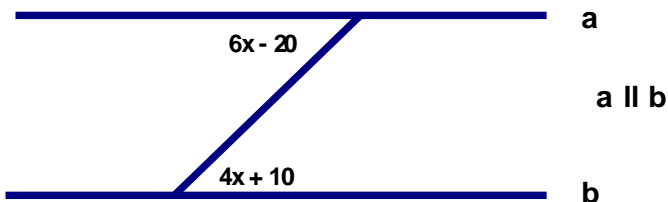


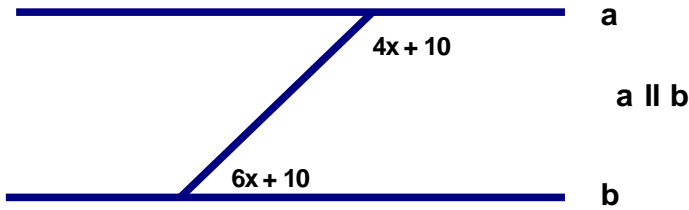
Figure 2



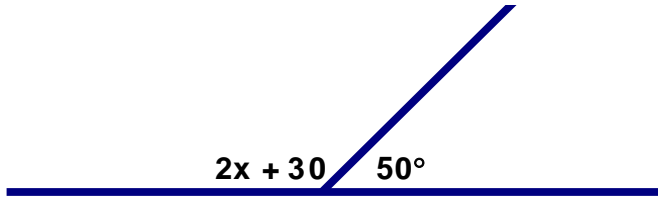
- ___53. In Figure 1 above, which is a valid conclusion?
 A. No cat owners also own dogs.
 B. No fish owners also own cats.
 C. No dog owners also own fish.
 D. No pet owner owns more than one pet.
- ___54. In Figure 2 above, which statement is true?
 A. No bushes are flowering plants.
 B. No roses are 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°



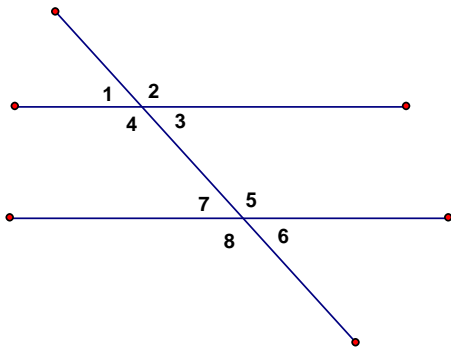
- ____ 61. What is the value of x in the figure below?
 A. 15° B. 16° C. 19° D. 0°



- ____ 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 $\triangle ABC$, $\angle A = 3n$, $\angle B = 5n - 30$, $\angle C = 2n + 10$. 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 $\triangle ABC$, $\angle A = 3n$, $\angle B = 5n - 30$, $\angle C = 2n + 10$. What is the measurement of $\angle A$?
- A. 20° B. 40° C. 60° D. 80°
- _____72. If $\triangle ABC$ 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 $\triangle CWH$ which angle is opposite \overline{CH} ?
- A. $\angle C$ B. $\angle P$ C. $\angle H$ D. $\angle W$
- _____74. If in $\triangle CWH$, $CW = WH$ and $WH = CH$, what is the measurement of $\angle W$?
- A. 40° B. 60° C. 80° D. Not possible to know
- _____75. If $\triangle ABC \cong \triangle XYZ$, 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 $\triangle ABC$ is an isosceles triangle with $AC = BC$ and $\angle A = 40^\circ$, what is $\angle B$?
- A. 40° B. 70° C. 80° D. None of the above
- _____77. If $\triangle ABC \cong \triangle XYZ$, $AB = 38$, $YZ = 28$, and $XY = 5x + 8$, what is the value of x ?
- A. 30 B. 20 C. 6 D. 4
- _____78. If $\triangle RST \cong \triangle HIJ$, $\angle R = 97^\circ$, $\angle J = 37^\circ$, 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 $\triangle CWH$, $\angle W = \angle H$ what can you conclude?
- A. $CW = WH$ B. $CH = CW$ C. $CH = WH$ D. $\angle C = 100^\circ$

Figure 1

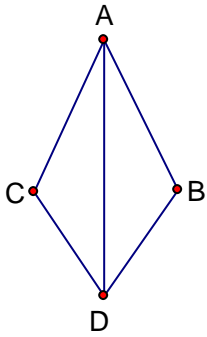


Figure 2

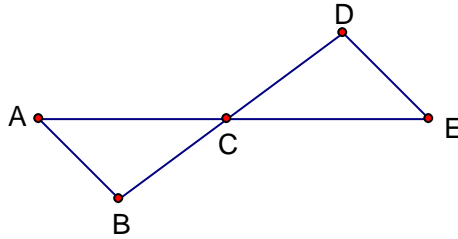


Figure 3

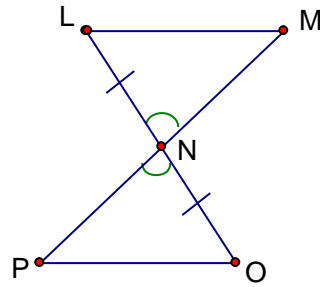


Figure 4

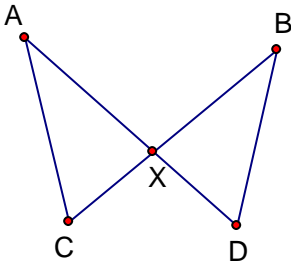


Figure 5

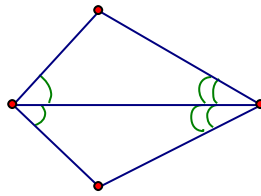
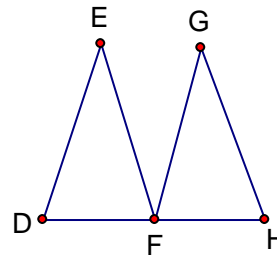
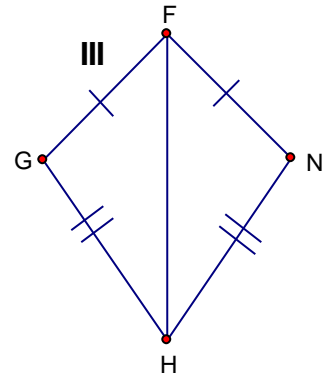
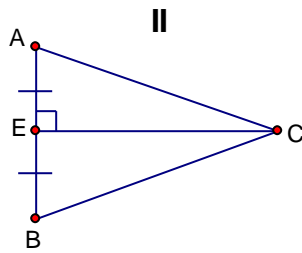
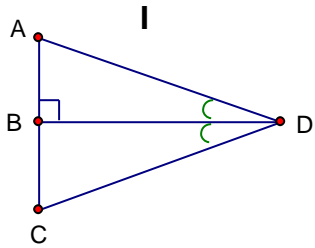


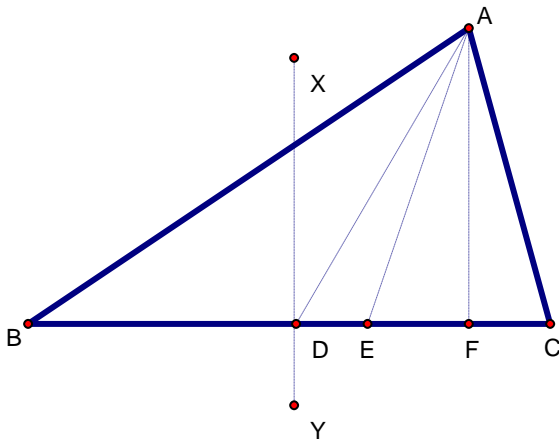
Figure 6



- ____ 81. In figure 1 above, what postulate would be used to prove that $\triangle ABD \cong \triangle ACD$ 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 $\triangle ABC \cong \triangle EDC$?
- A. ASA B. SAS C. SSS D. AAS
- ____ 83. In figure 3 above, what additional information is needed to prove that $\triangle MNL$ is congruent to $\triangle PNO$ 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 $\triangle AXC \cong \triangle BXD$?
- 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 $\triangle DEF \cong \triangle GFH$?
- A. $\triangle EDF \cong \triangle GFH$ C. $\triangle EFD \cong \triangle GHF$
 B. $\triangle FED \cong \triangle HGF$ D. $\triangle FDE \cong \triangle FHG$



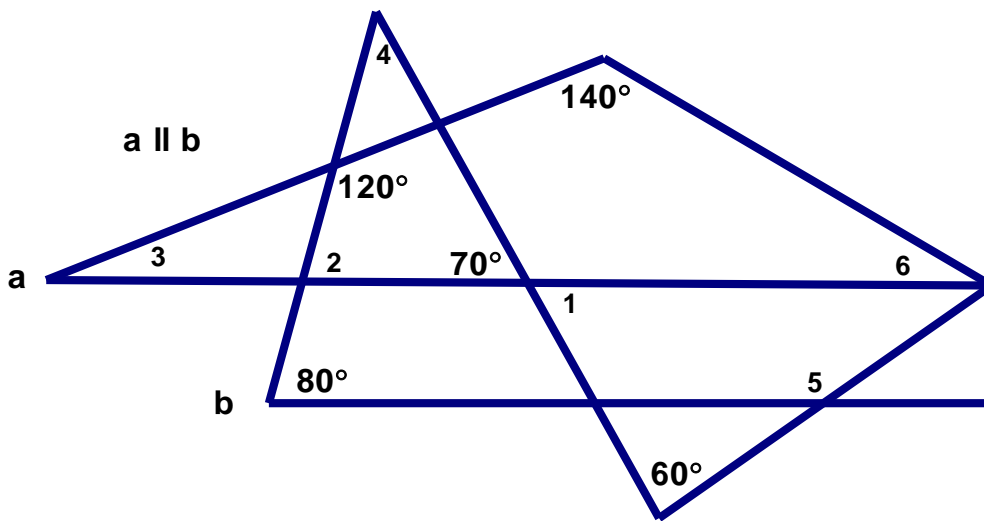
- ___ 87. In picture I above, what allows you to immediately conclude that $\triangle ABD \cong \triangle CBD$?
 A. ASA B. SAS C. AAA D. SAA
- ___ 88. In picture II above, what allows you to immediately conclude that $\triangle AEC \cong \triangle BEC$?
 A. ASA B. SAS C. AAA D. SAA
- ___ 89. In picture III above, what allows you to immediately conclude that $\triangle FGH \cong \triangle FNH$?
 A. SSS B. SAS C. AAA D. SAA
- ___ 90. What does the symbol \cong mean?
 A. similar B. equal to C. congruent D. approximately



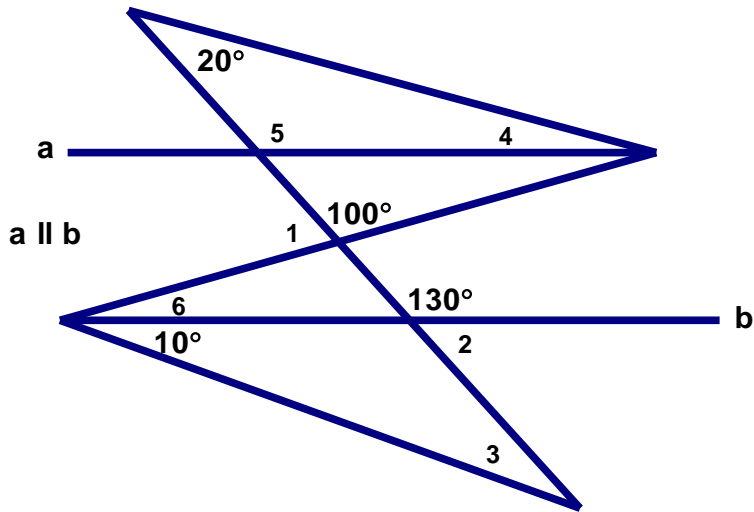
In the figure above, $BD = CD$, $\angle XDC = \angle AFC = 90^\circ$, and $\angle BAE = \angle CAE$.

- ___ 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

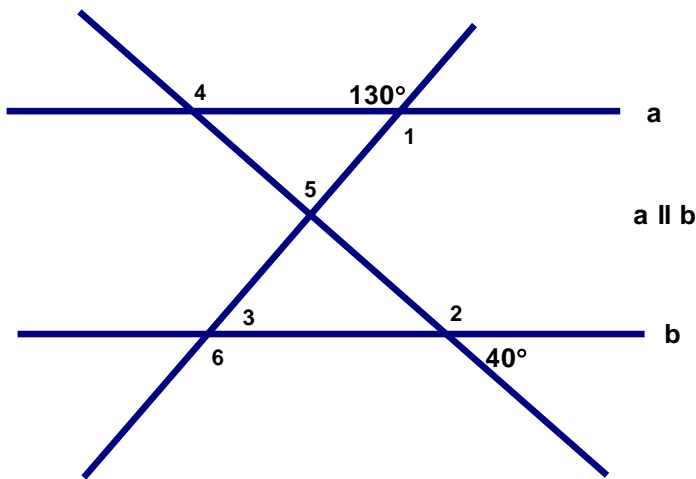
- ____ 106. In $\triangle ABC$, $\angle A = 59^\circ$, $\angle B = 60^\circ$, and $\angle C = 61^\circ$. What side is longest?
 A. \overline{AB} B. \overline{AC} C. \overline{CB} D. $\angle C$
- ____ 107. In $\triangle ABC$, $AB = 13$ cm, $BC = 12$ cm, and $AC = 16$ cm. What angle is smallest?
 A. $\angle A$ 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 $\triangle ABC \cong \triangle XYZ$, $\angle A = 40^\circ$, $\angle C = 80^\circ$, what is the measurement of $\angle X$?
 A. 40° B. 70° C. 80° D. 60°



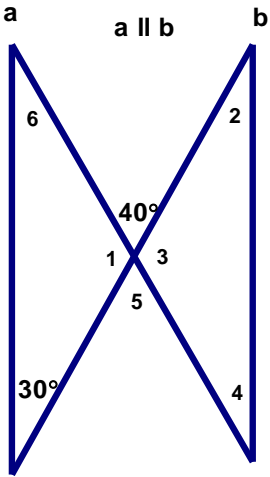
- ____ 110. What is the measurement of $\angle 1$ above?
 A. 20° B. 30° C. 70° D. 80°
- ____ 111. What is the measurement of $\angle 3$ above?
 A. 20° B. 30° C. 70° D. 80°
- ____ 112. What is the measurement of $\angle 6$ above?
 A. 20° B. 30° C. 70° D. 80°



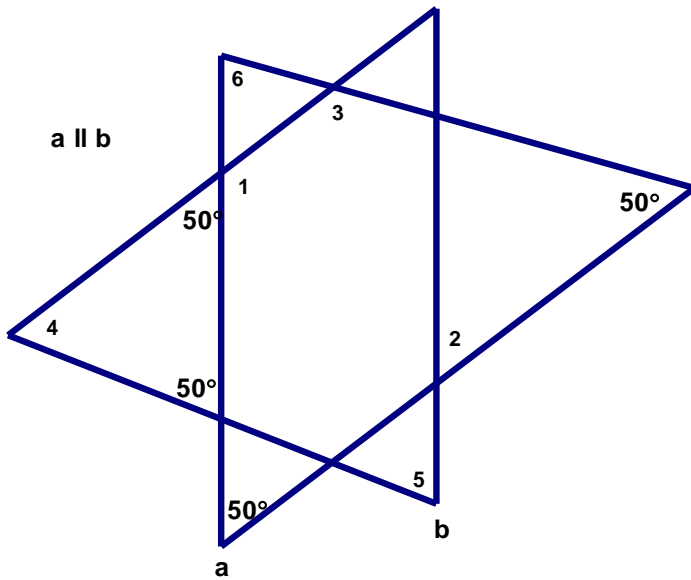
- ____ 113. What is the measurement of $\angle 1$ above?
 A. 80° B. 30° C. 40° D. 50°
- ____ 114. What is the measurement of $\angle 3$ above?
 A. 80° B. 30° C. 40° D. 80°
- ____ 115. What is the measurement of $\angle 6$ above?
 A. 80° B. 30° C. 40° D. 80°



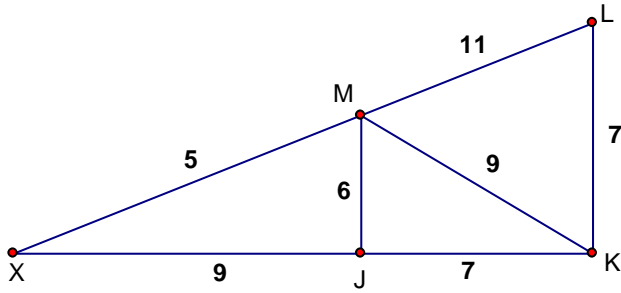
- ____ 116. What is the measurement of $\angle 2$ above?
 A. 140° B. 130° C. 90° D. 50°
- ____ 117. What is the measurement of $\angle 3$ above?
 A. 80° B. 30° C. 40° D. 50°
- ____ 118. What is the measurement of $\angle 5$ above?
 A. 80° B. 90° C. 100° D. 70°



- ____ 119. What is the measurement of $\angle 1$ above?
 A. 140° B. 40° C. 30° D. 10°
- ____ 120. What is the measurement of $\angle 4$ above?
 A. 140° B. 40° C. 30° D. 10°
- ____ 121. What is the measurement of $\angle 6$ above?
 A. 140° B. 40° C. 30° D. 10°



- ____ 122. What is the measurement of $\angle 4$ above?
 A. 80° B. 130° C. 40° D. 50°
- ____ 123. What is the measurement of $\angle 2$ above?
 A. 80° B. 130° C. 40° D. 50°
- ____ 124. What is the measurement of $\angle 6$ above?
 A. 80° B. 130° C. 40° D. 50°

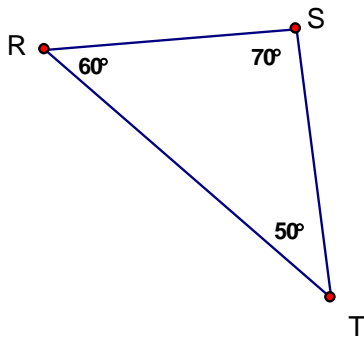


- _____ 125. When comparing $\angle JMK$ and $\angle MJX$ above, what is true?
 A. $\angle JMK > \angle MJX$ B. $\angle JMK < \angle MJX$
 C. $\angle JMK = \angle MJX$ D. It cannot be determined

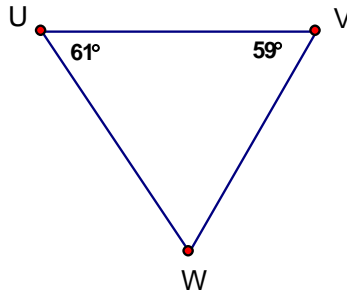
- _____ 126. In $\triangle ABC$ $\angle A = 8x + 12$, $\angle B = 15x - 40$, and $\angle C = 10x + 10$.
 Determine the longest side of $\triangle ABC$.
 A. \overline{AB} B. \overline{AC} C. \overline{CB} D. $\angle A$

- _____ 127. 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. $y = \frac{1}{2}x - 5$

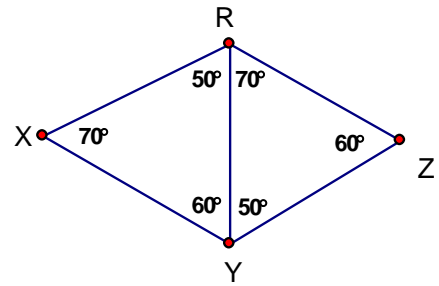
- _____ 128. What is the distance from (1, 5) to (7, 6)?
 A. $\sqrt{37}$ B. $\sqrt{23}$ C. $\sqrt{24}$ D. None of the above



I



II



III

- _____ 129. Which side is longest in figure I above?
 A. \overline{RT} B. \overline{ST} C. \overline{RS} D. Not possible

- _____ 130. Which side is longest in figure II above?
 A. \overline{UV} B. \overline{VW} C. \overline{UW} D. Not possible

- _____ 131. Which side is longest in figure III above?
 A. \overline{RX} B. \overline{RZ} C. \overline{RY} D. \overline{ZY}

- _____ 132. If \overline{BCDE} is congruent to \overline{OPQR} , then \overline{DE} is congruent to _____?
 A. \overline{PR} B. \overline{PQ} C. \overline{QR} D. \overline{OP}

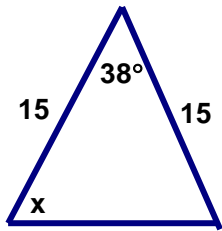


Figure 1

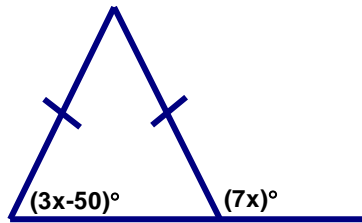


Figure 2

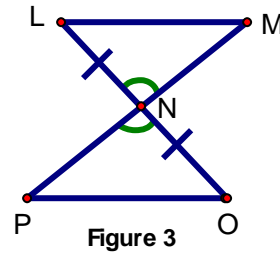
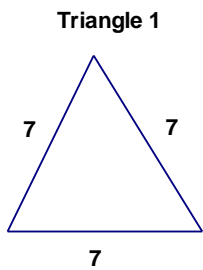
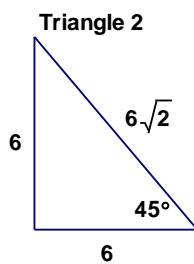


Figure 3

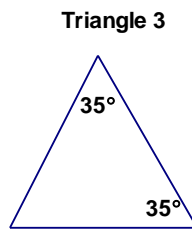
- ____ 133. In figure 1 above, what is the value of x ?
 A. 15 B. 38 C. 71 D. 142
- ____ 134. In figure 2 above, what is the value of x ?
 A. 40 B. 13 C. 23 D. None of the above



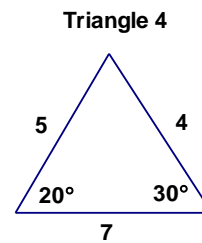
Triangle 1



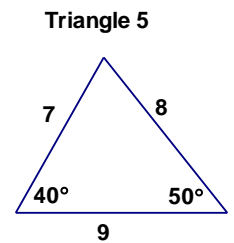
Triangle 2



Triangle 3



Triangle 4



Triangle 5

- ____ 135. What best describes triangle 1 above?
 A. Acute Scalene B. Acute Isosceles C. Right Isosceles D. Equilateral
- ____ 136. What best describes triangle 2 above?
 A. Acute Scalene B. Acute Isosceles C. Right Isosceles D. Equilateral
- ____ 137. What best describes triangle 3 above?
 A. Obtuse Scalene B. Acute Isosceles C. Obtuse Isosceles D. Equilateral
- ____ 138. What best describes triangle 4 above?
 A. Right Scalene B. Acute Isosceles C. Obtuse Scalene D. Equilateral
- ____ 139. What best describes triangle 5 above?
 A. Right Scalene B. Acute Isosceles C. Right Isosceles D. Equilateral
- ____ 140. 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
- ____ 141. 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. $-\frac{1}{4}$

- _____ 142. If $\triangle ABC \cong \triangle ERT$ with $AB = 10$, $BC = 13$, $\angle A = 39^\circ$, and $\angle R = 88^\circ$, what is RT ?
 A. 39° B. 88° C. 10 D. 13
- _____ 143. What additional information is needed to prove that $\triangle MNL$ is congruent to $\triangle PNO$ by ASA?
 A. $\overline{MN} \cong \overline{PN}$ B. $\overline{ML} \cong \overline{PO}$ C. $\angle L \cong \angle O$ D. $\angle M \cong \angle P$
- _____ 144. How many sides does a hexagon have?
 A. 5 B. 6 C. 7 D. 10
- _____ 145. What is a polygon with 4 sides called?
 A. pentagon B. decagon C. nonagon D. quadrilateral
- _____ 146. 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
- _____ 147. 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
- _____ 148. 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
- _____ 149. 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
- _____ 150. In $\triangle ABC$ $A = (3, 4)$, $B = (2, -1)$, and $C = (9, 2)$. Which angle is largest?
 A. $\angle A$ B. $\angle B$ C. $\angle C$ D. It can't be determined.
- _____ 151. In $\triangle ABC$ $A = (4, 1)$, $B = (6, 8)$, and $C = (7, 3)$. Which angle is largest?
 A. $\angle A$ B. $\angle B$ C. $\angle C$ D. It can't be determined.
- _____ 152. What is the distance from $(9, 8)$ to $(7, 10)$?
 A. $\sqrt{5}$ B. $\sqrt{8}$ C. $\sqrt{10}$ D. $\sqrt{12}$
- _____ 153. Which below is the symbol for the word "therefore"?
 A. \approx B. \cong C. Δ D. \therefore
- _____ 154. Which below is the symbol for approximately?
 A. \approx B. \cong C. Δ D. \therefore
- _____ 155. Which below is the symbol congruency?
 A. \approx B. \cong C. Δ D. \therefore

Figure 1

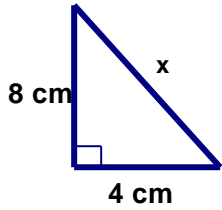


Figure 2

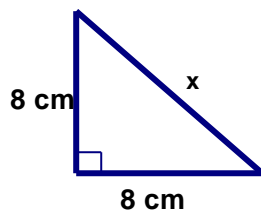


Figure 3

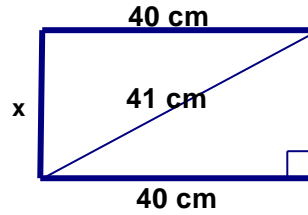
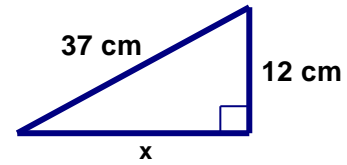


Figure 4



- ____ 156. 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
- ____ 157. What is the value of x in figure 2 above?
 A. 8.9 B. 11.3 C. 12.3 D. 14.2
- ____ 158. What is the value of x in figure 3 above?
 A. 8 B. 9 C. 11 D. 15
- ____ 159. What is the value of x in figure 4 above?
 A. 33.9 B. 35 C. 37 D. 38.9
- ____ 160. 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. $y = 2x - 1$
- ____ 161. Which equation below is perpendicular to $y = \frac{1}{2}x - 7$?
 A. $y = 2x + 7$ B. $y = -2x - 1$ C. $y = \frac{1}{2}x + 7$ D. $y = x + 1$
- ____ 162. 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. $p \rightarrow q$
- ____ 163. 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. $p \rightarrow n \vee q$
- ____ 164. 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
- ____ 165. 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
- ____ 166. What is the perimeter of a triangle with the following vertices:
 (1, 2) (4, 6) (7, 10)
 A. 15 B. 18 C. 20 D. 22
- ____ 167. What is the midpoint of (4, 6) and (10, 8)?
 A. (7, 7) B. (5, 9) C. (14, 14) D. (10, 18)

- _____168. 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 $DF = 2\text{cm}$, what is AC ?
A. 24 B. 28 C. 30 D. 32
- _____169. 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. $r \rightarrow p$
- _____170. 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
- _____171. Of 20 kids, 13 play tennis and 12 play soccer. How many play both?
A. 2 B. 3 C. 5 D. 6
- _____172. $\triangle ABC$ is a right isosceles triangle with A located at the point (2, 3) and $\angle CAB = 90^\circ$.
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

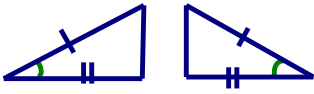


Figure 2

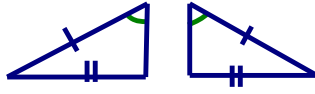


Figure 3



Figure 4

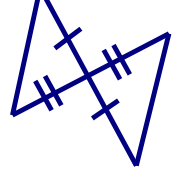


Figure 5

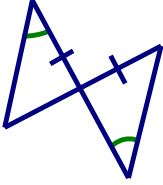


Figure 6

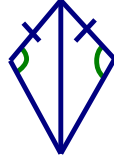


Figure 7

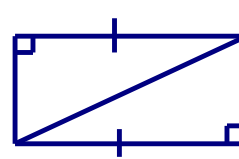


Figure 8

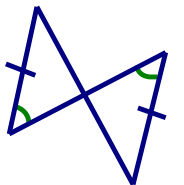


Figure 9

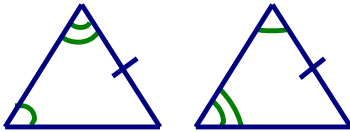


Figure 10

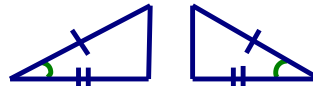
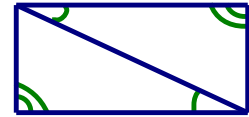


Figure 11



- ____ 173. In figure 1 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 174. In figure 2 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 175. In figure 3 above, what postulate would prove congruency?
 A. HL B. SSS C. ASA D. AAS E. Not able to be proven
- ____ 176. In figure 4 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 177. In figure 5 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 178. In figure 6 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 179. In figure 7 above, what postulate would prove congruency?
 A. HL B. SSS C. ASA D. AAS E. Not able to be proven
- ____ 180. In figure 8 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 181. In figure 9 above, what postulate would prove congruency?
 A. SSS B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 182. In figure 10 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven
- ____ 183. In figure 11 above, what postulate would prove congruency?
 A. HL B. SAS C. ASA D. AAS E. Not able to be proven