

GEOMETRY

FINAL EXAM REVIEW

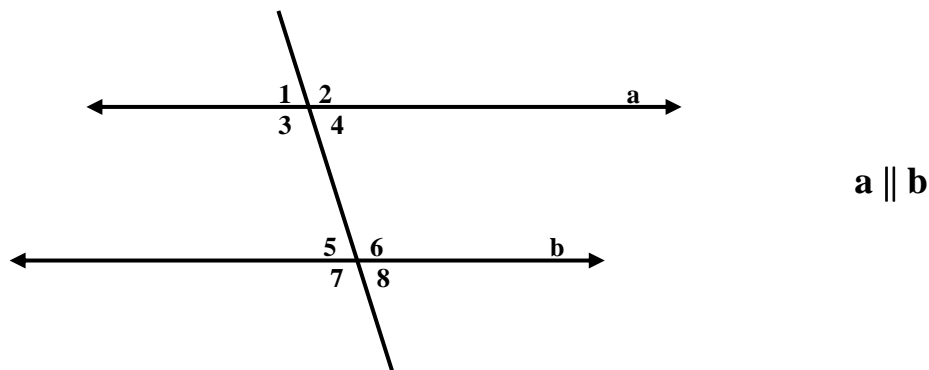
I. MATCHING

- | | |
|----------------------------------|--|
| _____ reflexive | A. $a(b + c) = ab + ac$ |
| _____ transitive | B. If $a = b$ & $b = c$, then $a = c$. |
| _____ symmetric | C. If D lies between A and B, then $AD + DB = AB$. |
| _____ substitution | D. If $a = b$, then $b = a$. |
| _____ distributive | E. $a = a$ |
| _____ definition of midpoint | F. If D is the midpoint of \overline{AB} , then $AD = \frac{1}{2}AB$. |
| _____ midpoint theorem | G. If $a + b = c$ and $a = d$, then $d + b = c$. |
| _____ segment addition postulate | H. If D is the midpoint of \overline{AB} , then $AD = DB$. |

II. Fill in the blank.

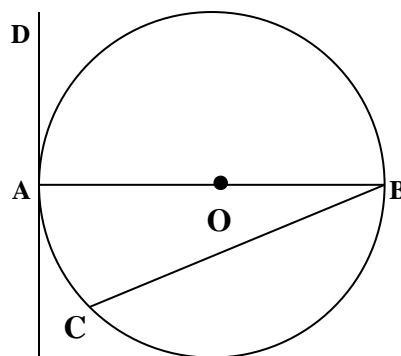
1. An equilateral triangle is also a(n) _____ triangle.
2. The _____ is the longest side of a right triangle.
3. Similar triangles have congruent corresponding _____ and the corresponding _____ are in proportion.
4. In an isosceles triangle, the _____ angle is the angle that is different.
5. The _____ of a triangle is a segment from a vertex to the midpoint of the opposite side.
6. A(n) _____ of a triangle is a segment from a vertex \perp to the opposite side.
7. A(n) _____ of a segment is a line, segment, or ray \perp to a segment at its midpoint.
8. The measure of a central angle is _____ to its intercepted arc.
9. Two _____ angles have a sum of 90° .
10. Two _____ angles have a sum of 180° .
11. A _____ has only 1 endpoint.
12. If two lines are _____, they form right angles.
13. Two lines intersect in a _____.
14. Two planes intersect in a _____.
15. Through any three collinear points there are _____.
Through any three non-collinear points there is _____.
16. _____ angles measure between 0° and 90° .
17. _____ angles measure between 90° and 180° .
18. Find the side of square with area 16 units². _____.
19. If the ratio of the measures of the angles of a triangle is 2:2:5, then the triangle is a(n) _____ triangle.
20. If 4 points all lie on the same line, then the points are _____.

21. The interior angle sum of a hexagon is _____.
22. The exterior angle sum of a decagon is _____.
23. If each interior angle of a regular polygon is 144° , then the polygon is a _____.
24. If each exterior angle of a regular polygon is 30° , then the polygon has _____ sides.
25. In a $30^\circ - 60^\circ - 90^\circ$ triangle, the long leg is _____ times the short leg.
26. In a $45^\circ - 45^\circ - 90^\circ$ triangle, the hypotenuse is _____ times the leg.
27. An angle inscribed in a semicircle is a _____ angle.
28. Write $\sqrt{32}$ in simplest radical form. _____
29. If $\angle A$ is a right angle and $m\angle A = (4x + 10)^\circ$, then $x =$ _____.

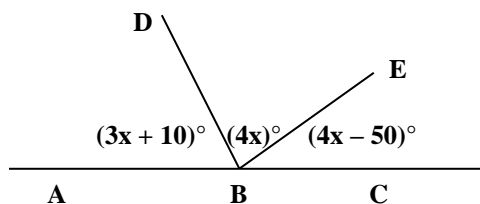


30. $\angle 3$ & $\angle 5$ are _____ angles & therefore are _____.
31. $\angle 4$ & $\angle 5$ are _____ angles & therefore are _____.
32. $\angle 2$ & $\angle 6$ are _____ angles & therefore are _____.
33. If $m\angle 6 = (x + 5)^\circ$ and $m\angle 4 = (2x + 10)^\circ$, then $m\angle 4 =$ _____.
34. True or False. A triangle may have sides of 7, 12, and 18.
35. To find the area of a right triangle, the _____ can be used as the base and height.

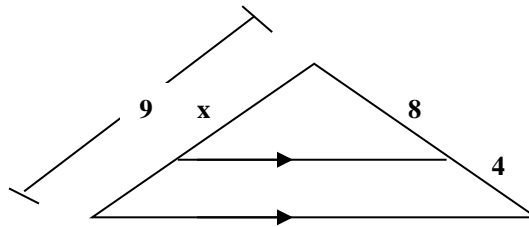
36. \overline{OB} is a _____.
37. \overline{AB} is a _____.
38. \overline{BC} is a _____.
39. \overrightarrow{BC} is a _____.
40. \overrightarrow{DA} is a _____.
41. Point O is the _____.
42. Point A is the _____.



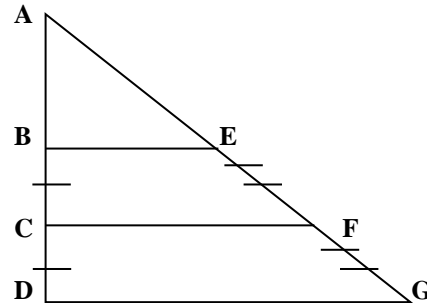
43. $x =$ _____
44. $m\angle ABD =$ _____



45. $x =$ _____

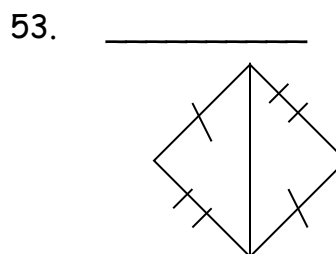
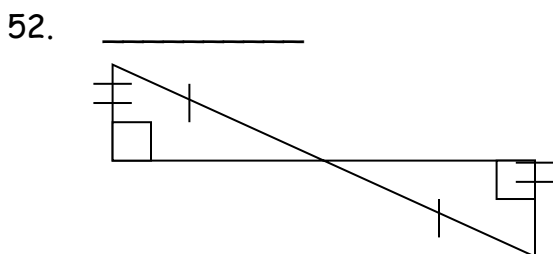
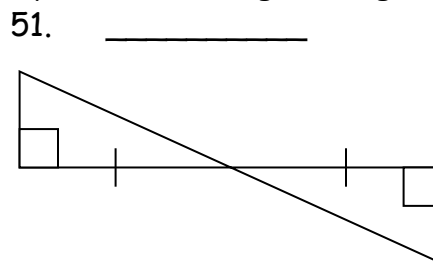
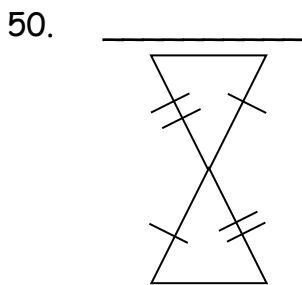


46. B and E are the midpoints of AD and AG.
If $DG = 40$, then CF _____.



47. Find the perimeter of a right triangle with legs 6 and 8. _____
 48. If the diagonals of a rhombus are 20 and 36, then the area is _____.
 49. Find the area of a right triangle whose hypotenuse is 25 and whose leg is 7. _____

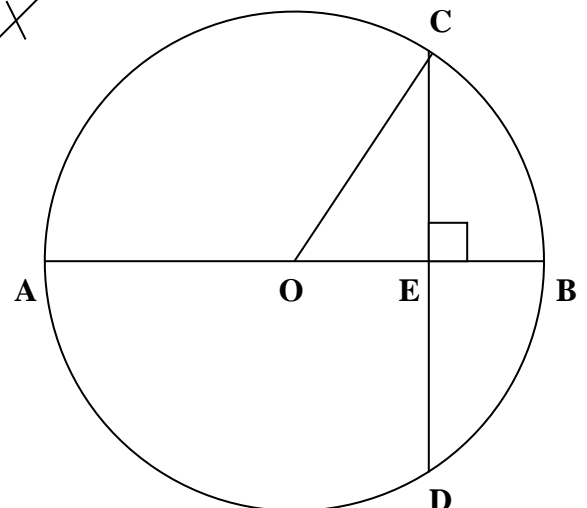
Name the theorem or postulate used to prove the triangles congruent.



54. $m\widehat{CB} =$ _____
 55. $m\widehat{BD} =$ _____
 56. $m\angle COB =$ _____
 57. $m\angle AOB =$ _____
 58. Draw $\angle ACB$. $m\angle ACB =$ _____

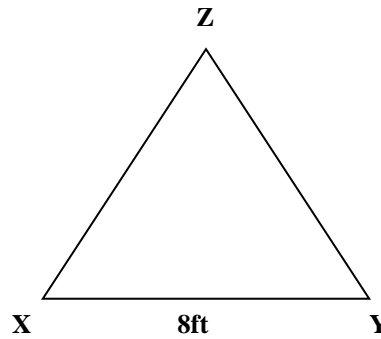
Given: O is the center.

$m\widehat{AC} = 130^\circ$

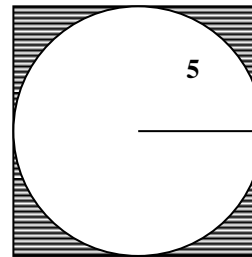


$\triangle XYZ$ is an equilateral triangle.

59. $ZY = \underline{\hspace{2cm}}$
 60. $m\angle Z = \underline{\hspace{2cm}}$
 61. altitude = $\underline{\hspace{2cm}}$



62. Area of Circle = $\underline{\hspace{2cm}}$
 63. Area of Square = $\underline{\hspace{2cm}}$
 64. Area of shaded region = $\underline{\hspace{2cm}}$
 65. Circumference of Circle = $\underline{\hspace{2cm}}$
 66. Perimeter of Square = $\underline{\hspace{2cm}}$



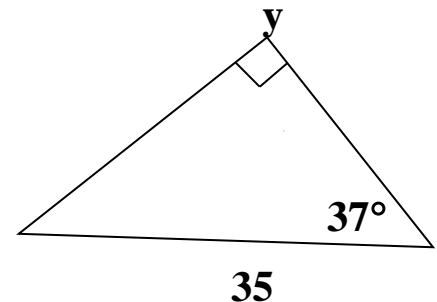
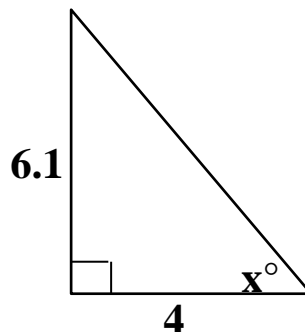
67. Area of parallelogram = $\underline{\hspace{2cm}}$



Round your answer to the nearest whole number or degree.

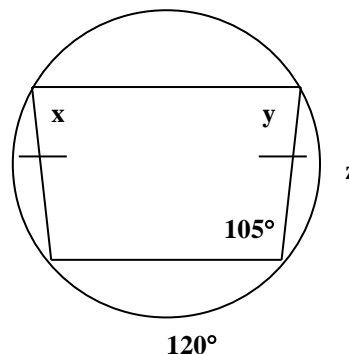
68. Find $x \approx \underline{\hspace{2cm}}$.

69. Find $y \approx \underline{\hspace{2cm}}$

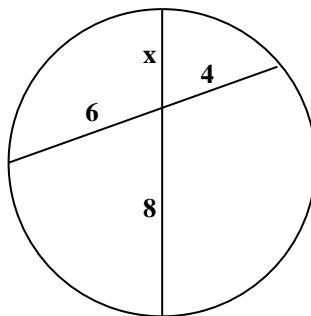


70. A ladder is positioned against a house at a 65° angle. The ladder is 10 feet tall. How far away from the house is the base of the ladder? Round your answer to the nearest tenth.

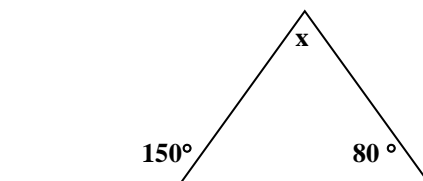
71. $x = \underline{\hspace{2cm}}$
 72. $y = \underline{\hspace{2cm}}$
 73. $z = \underline{\hspace{2cm}}$



74. $x =$ _____



75. 2 tangent lines drawn to a circle from the same point are _____.
76. If the diagonals of a quadrilateral are \perp , then the quad. is a _____ or a _____.
77. If the diagonals of a quad. are \perp and \cong , then the quad. is a _____.
78. If the diagonals of a quad. are \cong , then the quad. is a _____ or a _____.
79. The legs of an isosceles trapezoid are 10 ft. and the bases are 10 ft. and 22 ft. The length of the median is _____. The area of the trapezoid is _____.
80. In a parallelogram, _____ angles are supplementary and _____ angles are congruent.
81. Given $\triangle XYZ \cong \triangle RSN$, then $\angle Y \cong$ _____ and $\overline{XZ} \cong$ _____.
82. $x =$ _____

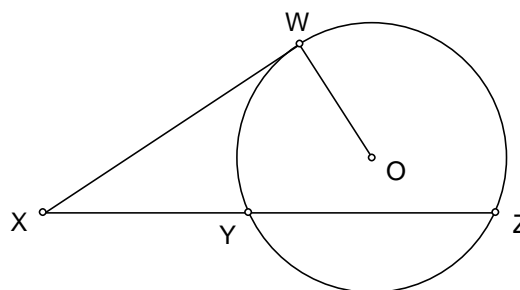


O is the center & \overline{WX} is tangent to Circle O.

83. $m\widehat{WY} = 100^\circ$, $m\widehat{YZ} = 90^\circ$, $m\angle X =$ _____

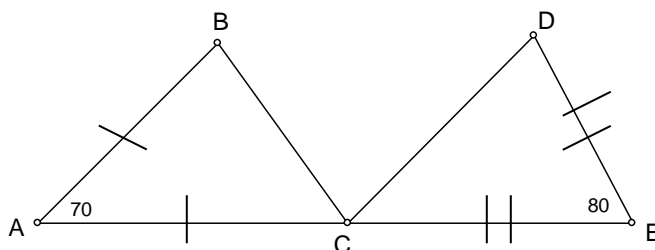
84. \widehat{WY} is a _____ arc.

85. \widehat{WYZ} is a _____ arc.

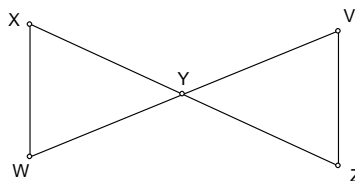


86. Find the volume of a rectangular prism with length 6 in, width 3 in, and height 4 in.
87. Find the total (surface) area of a cylinder with radius 4 m and height of 3 m.
88. The total (surface) area of a cylinder is $66\pi \text{ cm}^2$ and the radius is 3 cm. Find the volume.
89. What is the volume of a cone whose radius is 9 and slant height is 13?
90. The total (surface) area of a sphere is 64π . Find the radius of the sphere.

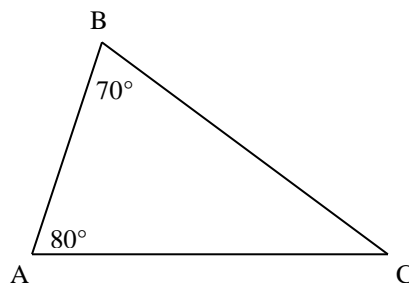
91. Find $m\angle BCD$.



92. Given: Y is the midpoint of \overline{XZ} and \overline{WV} .
Prove: $\angle W \cong \angle V$

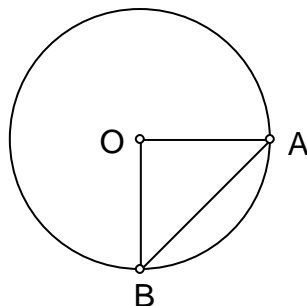


93. List the sides from largest to smallest.

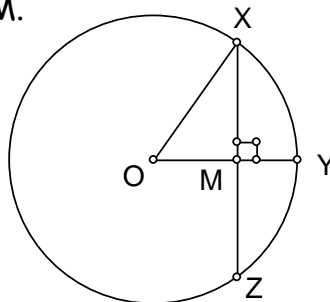


94. Points A , B , and C are collinear. If $AC = 8$, $BC = 6$, and $AB = 14$, which point is in between the other two? _____

95. $OA = 8$ and $m\angle AOB = 90$. Find AB .

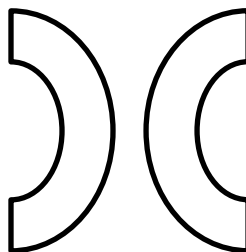


96. In $\odot O$, the radius is 41, and $XZ = 18$, find OM .

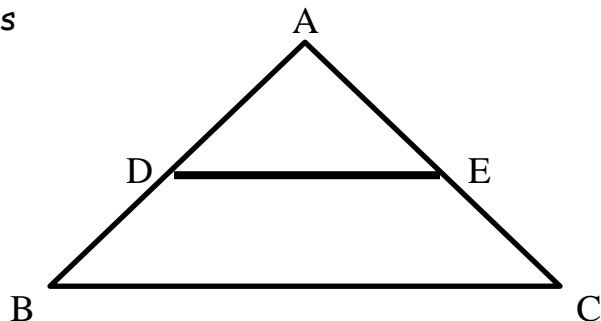


97. Find the scale factor of two rectangles if the perimeters are 36 cm and 48 cm respectively.

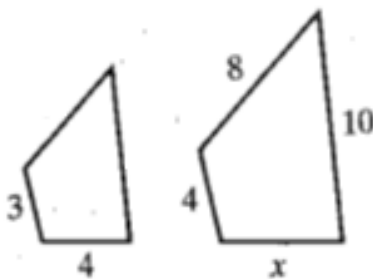
98. Name the transformation.



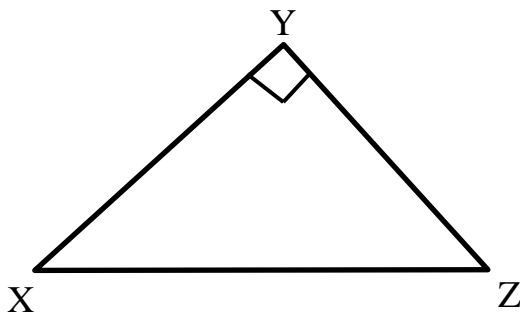
99. Name the transformation that maps $\triangle ABC$ to $\triangle ADE$.



100. Two similar polygons are shown. Find the scale factor and the value of x .



101. $YZ = \sqrt{5}$ and $XZ = \sqrt{2}$. Find XY . Answer in simplified radical form.



102. Describe the triangle with sides of 8, $2\sqrt{3}$, 9.

103. If the hypotenuse in an isosceles right triangle measures $6\sqrt{2}$ ft., then the length of each leg is _____.

104. Find the volume of a square pyramid with base edge 5 in. and height 3 in.

Answers
Matching
E, B, D, G, A, H, F, C

Fill in the Blank

- 1) Equiangular
- 2) Hypotenuse
- 3) Angles; sides
- 4) Vertex
- 5) Median
- 6) Altitude
- 7) \perp Bisector
- 8) Equal
- 9) Complementary
- 10) Supplementary
- 11) Ray
- 12) Perpendicular
- 13) Point
- 14) Line
- 15) Infinite Planes;
Exactly One Plane
- 16) Acute
- 17) Obtuse
- 18) 4 units
- 19) Isosceles
- 20) Collinear
- 21) 720°
- 22) 360°
- 23) Decagon
- 24) 12
- 25) $\sqrt{3}$
- 26) $\sqrt{2}$
- 27) Right
- 28) $4\sqrt{2}$
- 29) 20
- 30) Same Side Int.;
Supplementary
- 31) Alt Int;
Congruent
- 32) Corresponding;
Congruent
- 33) 120°
- 34) True
- 35) Legs

- 36) Radius
- 37) Diameter
- 38) Chord
- 39) Secant
- 40) Tangent
- 41) Center
- 42) Point of Tangency
- 43) 20
- 44) 70°
- 45) 6
- 46) 30
- 47) 24 units
- 48) 360 units^2
- 49) 84 units^2
- 50) SAS
- 51) ASA
- 52) HL or AAS
- 53) SSS
- 54) 50°
- 55) 50°
- 56) 50°
- 57) 180°
- 58) 90°
- 59) 8
- 60) 60°
- 61) $4\sqrt{3}$
- 62) $25\pi \text{ units}^2$
- 63) 100 units^2
- 64) $(100 - 25\pi) \text{ units}^2$
- 65) $10\pi \text{ units}$
- 66) 40 units
- 67) $120\sqrt{3} \text{ units}^2$
- 68) 57°
- 69) 28
- 70) 4.2 ft.
- 71) 75°
- 72) 75°
- 73) 30°
- 74) 3
- 75) Congruent
- 76) Rhombus; square
- 77) Square
- 78) Rectangle; Square

- 79) 15 ft. and 128 ft^2
- 80) Consecutive;
Opposite
- 81) $\angle S$; \overline{RN}
- 82) 70°
- 83) 35°
- 84) Minor
- 85) Major
- 86) 72 units^3
- 87) $56\pi \text{ units}^2$
- 88) $72\pi \text{ cm}^3$
- 89) $54\pi\sqrt{22} \text{ units}^3$
- 90) 4
- 91) 75°
- 92) Y is the midpoint
of \overline{XZ} and \overline{WV}
(Given), $\overline{XY} \cong \overline{YZ}$; $\overline{WY} \cong \overline{YV}$
(Def of Midpoint),
 $\angle XYW \cong \angle ZYV$
(Vertical Angles
are Congruent),
 $\triangle XYW \cong \triangle ZYV$
(SAS), $\angle W \cong \angle V$
(CPCTC)
- 93) $\overline{BC}, \overline{AC}, \overline{AB}$
- 94) C
- 95) $8\sqrt{2}$
- 96) 40
- 97) $\frac{3}{4}$
- 98) Reflection
- 99) Dilation
- 100) $\frac{3}{4}$ and $x = \frac{16}{3}$
- 101) $\sqrt{7}$
- 102) Obtuse
- 103) 6 ft.
- 104) 25 in^3