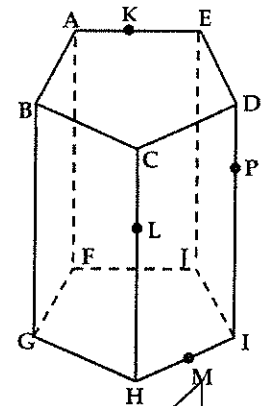
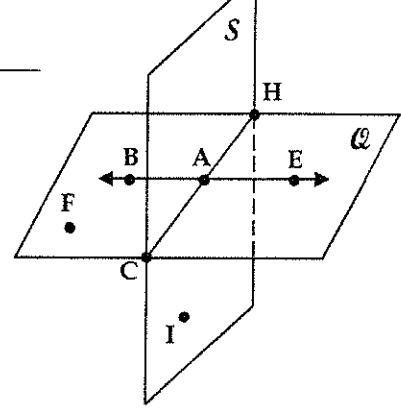


Chapter 1

- Determine if the following set of points are coplanar or noncoplanar.
 - A, K, E, C _____
 - A, B, F, G _____
 - L, M, J _____
 - A, C, F _____
 - F, G, H, D _____

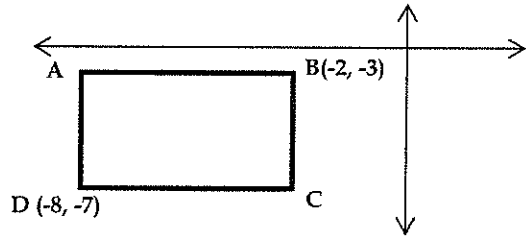


- Name 3 collinear points. _____
- Determine if the following are true or false.
 - Plane Q and Plane S intersect at \overline{CH} _____
 - \overline{BE} contains A _____
 - There is only one distinct line that contains points A and B. _____
 - F, A, and I are collinear _____
 - F, A, and I are coplanar _____
 - Exactly one plane contains C, A, and H. _____
 - Another name for plane Q is BAE. _____



- What is the intersection of planes S and Q? _____
 - Name a line that lies in both planes S and Q. _____
- Which point(s) are coplanar with B, A, and H? _____

- For the rectangle ABCD, find
 - perimeter _____
 - area _____



- midpoint of \overline{BD} _____
- length of \overline{BD} _____

- M is the midpoint of \overline{PQ} . For M(-2,-3) and Q(4, -6), find the coordinates of P.

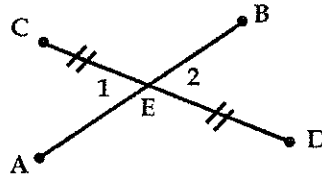
- M is the midpoint of \overline{PQ} . For P(-1,7) and M(-4,0), find the coordinates of Q.

- Find the length of the segment whose endpoints are (5,-3) and (-6,-2).

Chapter 2

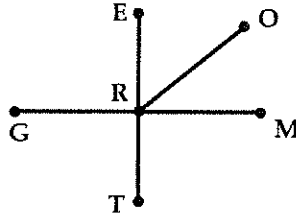
12. Refer to the diagram at the right. Which of the following CANNOT be concluded from the diagram?

- A. $m\angle 1 = m\angle 2$
- B. E is the midpoint of \overline{CD}
- C. E is the midpoint of \overline{AB}
- D. $AE + EB = AB$
- E. \overline{AB} and \overline{CD} intersect at E
- F. E is between A and B



13. Refer to the diagram at the right. Which of the following statements are valid conjectures?

- A. $\angle GRT \cong \angle ERM$
- B. $ER + RT = ET$
- C. $\angle ERO \cong \angle ORM$
- D. $m\angle ERO + m\angle ORM = m\angle ERM$
- E. $\overline{GR} \cong \overline{RM}$
- F. R is the midpoint of \overline{ET}



14. Write the converse for each statement.

A. *Vertical angles are congruent.*

Converse _____

Is it a biconditional? _____

If so, write it: _____

B. *Fish cannot talk.*

Converse _____

Is it a biconditional? _____

If so, write it: _____

C. *Perpendicular lines form right angles.*

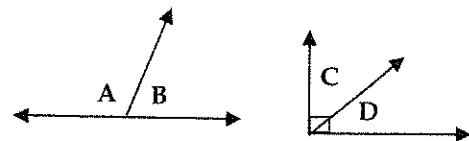
Converse _____

Is it a biconditional? _____

If so, write it: _____

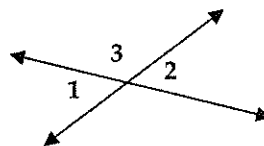
15. Use the diagrams at the right,

- A. If $m\angle A = 4x$, express $m\angle B$ _____
- B. If $m\angle C = 3x + 15$, express $m\angle D$. _____
- C. If $m\angle B = 7x - 36$, express $m\angle A$. _____
- D. If $m\angle D = 8x + 10$, express $m\angle C$. _____



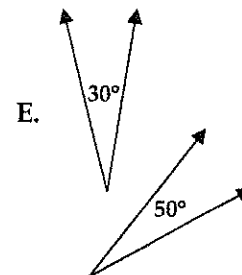
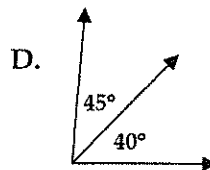
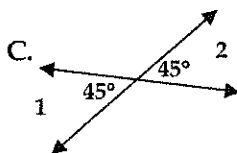
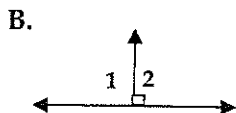
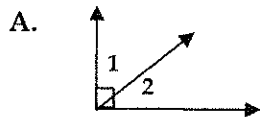
16. You want to give a proof for the theorem, "If a pair of angles is vertical, then they are congruent." What should the "given" statement be?

- A. $\angle 1$ and $\angle 2$ are vertical angles
- B. $\angle 1 \cong \angle 2$
- C. $m\angle 1 + m\angle 3 = 180$

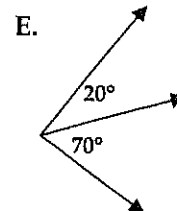
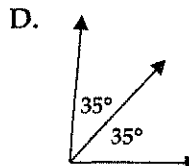
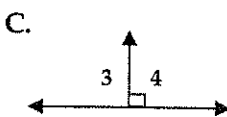
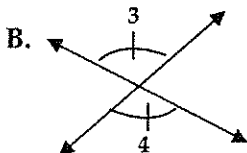
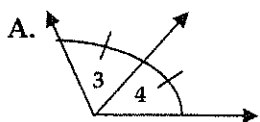


For #17-18, circle the counterexamples to the statement. Remember, some examples are supporters, some distracters, and the examples that contradict are counterexamples! *Circle all counterexamples.*

17. All adjacent angles are complementary.



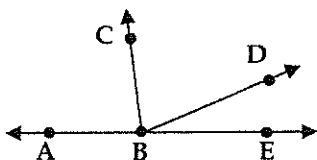
18. All adjacent angles are congruent.



19. Two angles are complementary. One angle is 34 more than the other. What is the measure of the larger angle? _____

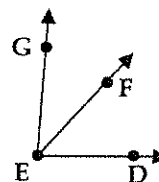
20. Two angles are supplementary. One angle is 20 more than 4 times the other. Find both angles.

21. \overline{BC} bisects $\angle ABD$. If $m\angle ABC = 5x - 10$ and $m\angle DBE = 20$, find $m\angle CBE$. _____

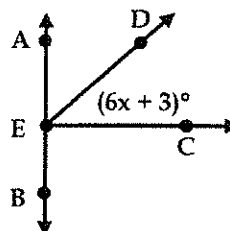


22. Q is the midpoint of \overline{LM} . A is the midpoint of \overline{LQ} . If $LA = x + 4$ and $AM = 5x - 8$, find QM . _____

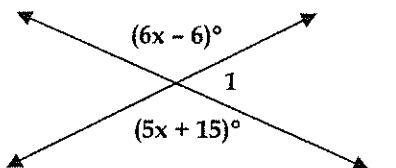
23. If $m\angle GEF = 2x + 5$ and $m\angle DEF = 10x - 4$ and $m\angle GED = 61^\circ$, find $m\angle GEF$ _____ and $m\angle DEF$ _____.



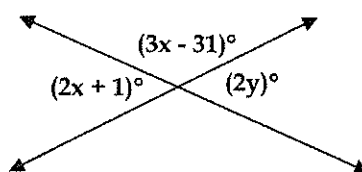
24. Given $\overline{AB} \perp \overline{EC}$ and \overline{ED} bisects $\angle AEC$. Find x . _____



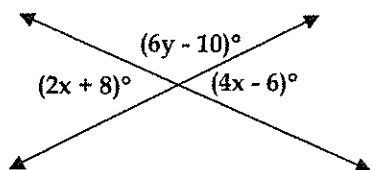
25. Find the $m\angle 1$. _____



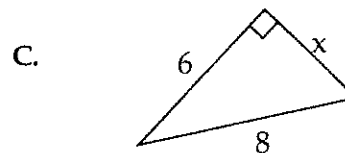
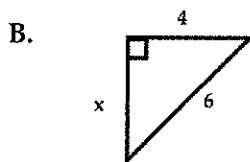
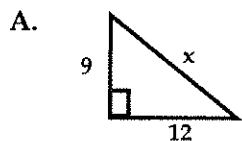
26. Find the value of y . _____



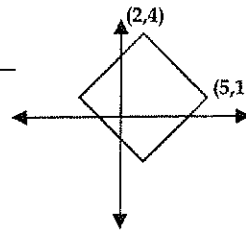
27. Find the value of y . _____



28. Use the Pythagorean Theorem to find x . Leave answers as simplified square roots.



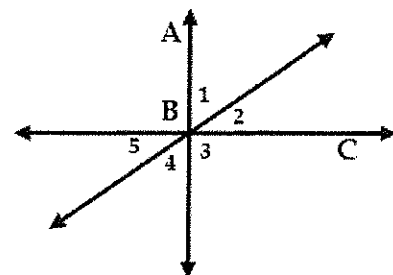
29. Find the EXACT perimeter of the square. _____



30. The supplement of an angle is 30 more than 5 times the angle. What is the measure of the supplement? _____

31. Given: $\overline{AB} \perp \overline{BC}$
 Prove: $m\angle 1 + m\angle 5 = 90$

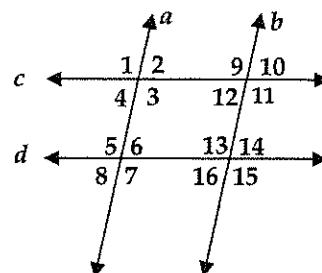
Statement	Reason



Chapter 3

32. Refer to the diagram at the right. Give the name of the special angle pair.

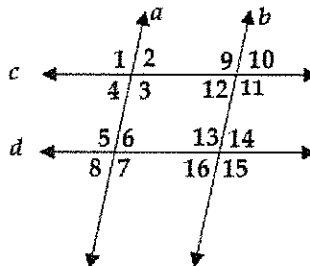
- A. $\angle 10$ and $\angle 14$ _____
- B. $\angle 4$ and $\angle 10$ _____
- C. $\angle 7$ and $\angle 3$ _____
- D. $\angle 16$ and $\angle 6$ _____
- E. $\angle 12$ and $\angle 13$ _____
- F. $\angle 4$ and $\angle 11$ _____
- G. $\angle 4$ and $\angle 7$ _____



33. If lines are parallel, then AI are _____, AE are _____, Corr are _____, SSI are _____, and SSE are _____.

34. Refer to the diagram. Which of the following would prove that $a \parallel b$? Circle all that apply.

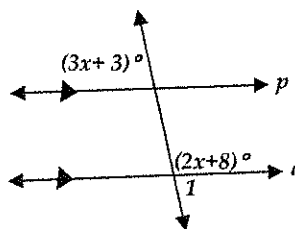
- A. $\angle 1$ supp $\angle 11$
- B. $\angle 3$ supp $\angle 12$
- C. $\angle 10 \cong \angle 16$
- D. $\angle 7 \cong \angle 3$
- E. $\angle 6 \cong \angle 16$



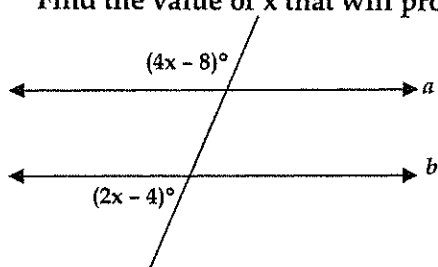
35. Refer to the diagram above. If $a \parallel b$ and $c \parallel d$, which of the following angles are congruent to $\angle 16$?

- A. $\angle 5$
- B. $\angle 10$
- C. $\angle 6$
- D. $\angle 4$
- E. $\angle 7$
- F. $\angle 8$

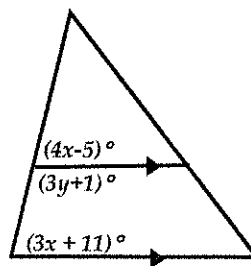
36. Given $p \parallel q$, find the measure of $\angle 1$. _____



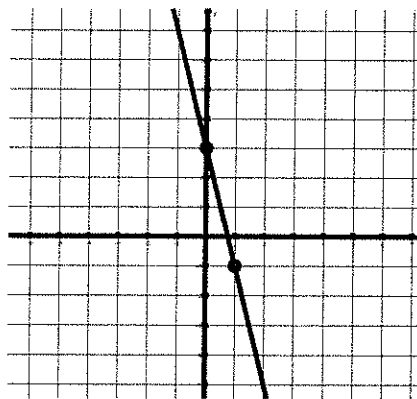
37. Find the value of x that will prove $a \parallel b$. _____



38. Find x _____ y _____



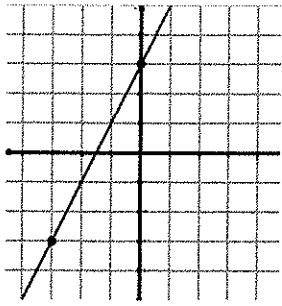
39. Find the slope of \overline{AB} if A (-4,-2) and B (-6, -2). _____
 Find the slope of a line parallel to \overline{AB} . _____
 Find the slope of a line perpendicular to \overline{AB} . _____
40. Find the slope of \overline{AB} if A (4,5) and B (-6, -2). _____
 Find the slope of a line parallel to \overline{AB} . _____
 Find the slope of a line perpendicular to \overline{AB} . _____
41. The equation of a line is $3x - 5y = 15$. What is the slope of this line? _____ Find:
 slope of a line \parallel to this line? _____ an equation of a line \parallel to this line. _____
 slope of a line \perp to this line? _____ an equation of a line \perp to this line. _____
42. The equation of a line is $8x = -16$. What is the slope of this line? _____ Find:
 slope of a line \parallel to this line? _____ an equation of a line \parallel to this line. _____
 slope of a line \perp to this line? _____ an equation of a line \perp to this line. _____
43. The equation of a line is $y + 6 = 10$. What is the slope of this line? _____ Find:
 slope of a line \parallel to this line? _____ an equation of a line \parallel to this line. _____
 slope of a line \perp to this line? _____ an equation of a line \perp to this line. _____
44. For the line $3x = -15$, find:
- A. direction _____
 - B. slope _____
 - C. slope of \parallel line _____
 - D. slope of \perp line _____
 - E. equation of \parallel line _____
 - F. equation of \perp line _____



45. Determine if the following lines are \parallel , \perp , the same line, or neither to the line graphed.
- A. $4x + y = 3$ _____
 - B. $y = \frac{1}{4}x$ _____
 - C. $y = \frac{1}{4}$ _____
 - D. $y = -4x + 4$ _____
46. Given the points: P(-7,1) Q(5, -8), R (-11, -2) and S(-3,4). Determine if \overline{PQ} and \overline{RS} are parallel, perpendicular, or neither. *Show thorough, organized, labeled work!*

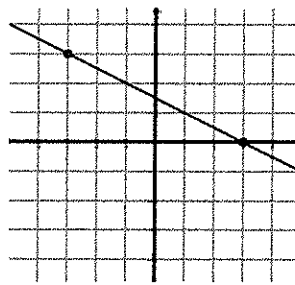
\overline{PQ} and \overline{RS} are _____ because _____

47. Find the slope of a line that is perpendicular to the graphed line.



Slope of \perp line _____

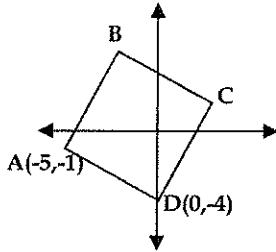
48. Determine if the following lines are \parallel , \perp , or neither to the graphed line.



- _____ a. $y = \frac{1}{2}x - 5$
 _____ b. $y = -\frac{1}{2}x + 3$
 _____ c. $y = 2x - 4$
 _____ d. $y = 0.5x + 3$
 _____ e. $2x + y = 9$
 _____ f. $y = 2$
 _____ g. $x = -\frac{1}{2}$

49. Given the square below.

- A. Find the slope of \overline{AB} . _____



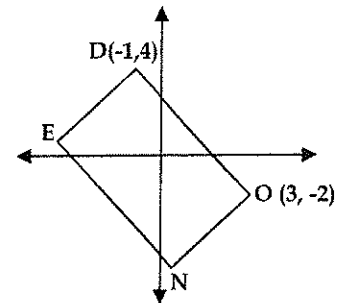
- B. Find the exact length of one side. _____

- C. Find the perimeter of the square _____

50. Given the rectangle below.

- A. Find the slope of \overline{NE} _____

- B. Find the slope of \overline{NO} . _____



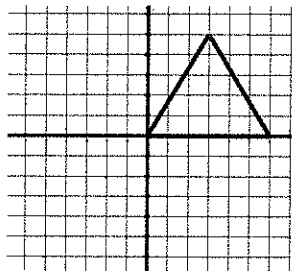
- B. Find the EXACT & approximate length of \overline{DO} . _____

51. A line in the coordinate system passes through the point (5, 2) and has a slope of $\frac{2}{3}$. Another point on this line is $(x, -2)$. What is the value of x ? _____

52. A line in the coordinate system passes through the point $(-2, 3)$ and has a slope of $-1/2$. Another point on this line is $(10, y)$. What is the value of y ? _____
53. A line passes through points $A(-3, 5)$ and $B(3, 13)$. What is the slope of a line perpendicular to line AB ? _____

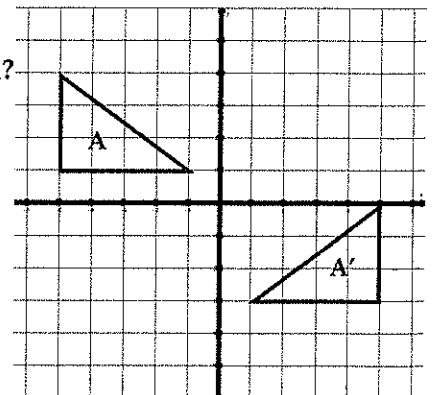
Chapter 12

54. Which transformation of the triangle will cause the resulting triangle to be located in exactly the same position?



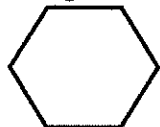
- A. Clockwise rotation about the origin 90° , then a reflection over the x-axis
 B. Reflection over the x-axis, then clockwise rotation about the origin of 180°
 C. Reflection over the y-axis, reflection over the x-axis, then clockwise rotation about the origin of 90°
 D. Rotation about the origin of 180° , reflection over the y-axis, then reflection over the x-axis

55. Look at ΔA and its image $\Delta A'$. Which best describes the series of transformations that were performed?



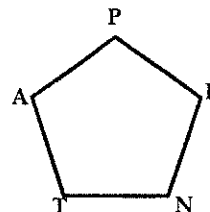
- A. A rotation of 180° and a translation of 4 units down
 B. A reflection across the y-axis and a translation of 4 units down
 C. A reflection across the y-axis and a reflection across the x-axis
 D. A rotation of 90° counterclockwise and a translation 6 units to the right
56. Given a regular hexagon, how many lines exist such that a reflection across the line would take the hexagon onto itself?

- A. 12
 B. 3
 C. 6
 D. 8
 E. infinity



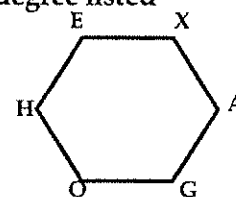
57. $\triangle DOG$ has vertices $D(1,6)$, $O(-4,7)$, and $G(2,-3)$. Reflect $\triangle DOG$ over the line $y = x$ and then rotate 90° *clockwise*. What is the final image? D _____ O _____ G _____

58. What is the clockwise rotation that maps P onto T for the regular pentagon?

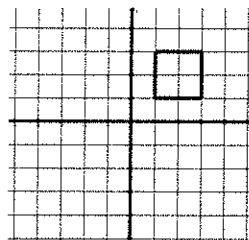


59. For the regular hexagon, point G is rotated about the center of the hexagon by the degree listed below. Which point of the hexagon will coincide with the image of G ?

- A. rotate 120° counterclockwise _____
 B. rotate 120° clockwise _____
 C. rotate 240° clockwise _____
 D. rotate 60° counterclockwise _____



60. Which of these transformations of the square will result in the figure being carried onto itself?



- A. a reflection over the x -axis
 B. a reflection over the y -axis
 C. a reflection over the x -axis, followed by a clockwise rotation about the origin of 270°
 D. a reflection over the x -axis, followed by a counterclockwise rotation about the origin of 180°

61. $\triangle ABC$ has vertices $A(-3, 7)$, $B(4, -2)$, and $C(-2, -6)$. If $\triangle ABC$ is reflected over the x -axis and then translated along the vector $\langle -3, 4 \rangle$, what is the final image of B ? _____

62. $\triangle ABC$ has vertices A (-4, 2), B(4, -2), and C(3, 5). If $\triangle ABC$ is reflected over the line $y = x$, translated 3 units down and 5 units left, and then rotated 90° ccw. What is the final image?

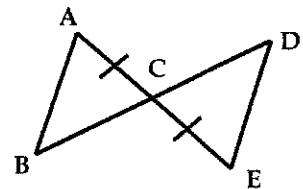
Final image: A _____ B _____ C _____

Chapter 4

63. Name the property that justifies each statement.
- If $AB = CD$ and $CD = LM$, then $AB = LM$ _____
 - If $3x - 2 = 9$, then $3x = 11$. _____
 - If $PQ + JL = AB + JL$, then $PQ = AB$. _____
 - If $AB = CD$, then $CD = AB$. _____
 - If $AB + CD = LM$ and $CD = XY$, then $AB + XY = LM$. _____
64. Name the 5 postulates that are used to prove triangles congruent.
65. Name 2 ways that do NOT work to prove triangles congruent.

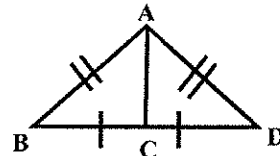
66. What additional information is needed to prove $\triangle CAB \cong \triangle CED$ by ASA?

- $\angle B \cong \angle D$
- $AB = ED$
- $\angle A \cong \angle E$
- $BC = DC$



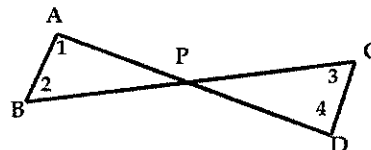
67. What theorem(s) could be used to prove $\triangle ABC \cong \triangle ADC$?

- SAS
- SSS
- ASA
- AAS
- HL

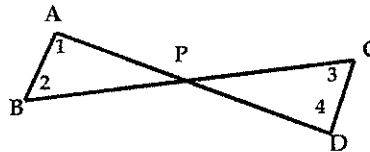


68. Look at the triangles. P is the midpoint of \overline{AD} . What else needs to be congruent to prove that the triangles are congruent using Angle-Angle-Side (AAS)?

- $\angle 1 \cong \angle 4$
- $\angle 2 \cong \angle 3$
- $\overline{BP} \cong \overline{CP}$
- It is not possible to prove by AAS.

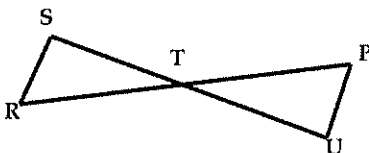


69. Look at the triangles. P is the midpoint of \overline{AD} . What else needs to be congruent to prove that the triangles are congruent using Angle-Side-Angle (ASA)?
- A. $\angle 1 \cong \angle 4$
 - B. $\angle 2 \cong \angle 3$
 - C. $BP \cong CP$
 - D. It is not possible to prove by AAS.



70. Given: $\overline{TP} \cong \overline{TR}$ and $\overline{TS} \cong \overline{TU}$. Which of the following theorems or postulates could be used to prove $\triangle TPU \cong \triangle TRS$?

- A. SSS
- B. ASA
- C. AAS
- D. SAS
- E. It is not possible to prove the triangles congruent.



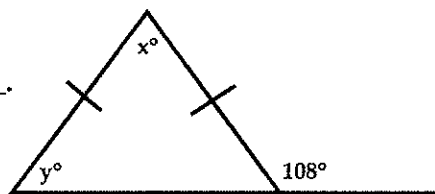
71. $\triangle ABC$ is isosceles with vertex $\angle B$. If $m\angle A = 52^\circ$, find the $m\angle B$ _____ $m\angle C$ _____

72. In $\triangle FRG$, $m\angle R = 70^\circ$ and $\angle F$ is 4 less than half $\angle G$. Find $m\angle F$ _____ $m\angle G$ _____ and list the sides in order from greatest to least. _____

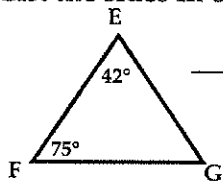
73. If $\triangle ABC \cong \triangle LMN$, which of the following are true? Circle all that apply.

- A. $\overline{AB} \cong \overline{LM}$
- B. $\angle B \cong \angle N$
- C. $\overline{AC} \cong \overline{LN}$
- D. $\angle C \cong \angle N$

74. Find the values of x _____ y _____.



75. List the sides in order from smallest to largest. _____



ANSWER KEY:

- 1) Co, Co, Co, Co, Non
- 2) Answers may vary... Ex) C, L, H
- 3) T, T, T, F, T, F, F
Noncollinear pts.
- 4) \overline{CH} , \overline{CH}
- 5) F, C, E
- 6) 20, 24
- 7) (-5, -5)
- 8) $2\sqrt{13}$
- 9) (-8, 0)
- 10) (-7, -7)
- 11) $\sqrt{122}$
- 12) C
- 13) A, B, D
- 14) A) If angles are congruent, then they are vertical. Not biconditional.
B) If it cannot talk, then it's a fish. Not Biconditional.
C) If lines form right angles, then they are perpendicular.
Bicond \rightarrow Lines are perpendicular if and only if they form right angles.
- 15) A) $180-4x$ B) $75-3x$ C) $216-7x$ D) $80-8x$
- 16) A
- 17) B&D
- 18) E
- 19) 62°
- 20) 32° , 148°
- 21) 100
- 22) 28
- 23) 15, 46
- 24) 7
- 25) 60
- 26) 42.5
- 27) 28
- 28) 15, $\sqrt{20} = 2\sqrt{5}$, $\sqrt{28} = 2\sqrt{7}$
- 29) $12\sqrt{2}$
- 30) 155
- 31) See help sheet posted on classroom
- 32) Corr, AE, Corr, AI, SSI, SSE, none
- 33) First three are congruent and the last two are supplementary
- 34) B, E
- 35) B, C, D, F
- 36) 104.4
- 37) 32
- 38) 16, 40
- 39) 0, 0, undefined
- 40) $7/10$, $7/10$, $-10/7$
- 41) $3/5$, $3/5$, $y=3/5x+\#$, $-5/3$, $y=-5/3x+\#$
- 42) Undef, undef, $x=\#$, 0, $y=\#$
- 43) 0, 0 $y=\#$, undef, $x=\#$

Reminder: 3 pts are ALWAYS Coplanar

Reminder: Planes must be named using

Note: area=base*height pt A(-8,-3) C(-2,-7)

Note: Use distance formula.... $\sqrt{52} = \sqrt{4 * 13} = 2\sqrt{13}$

Note: $x=18$

Note: $AM=3(LA)$

Note: use distance formula for one side $\rightarrow \sqrt{18} = 3\sqrt{2}$

Note: the other angle would be 25 degrees

- 44) Vertical, undef, undef, 0, $x \neq \#$, $y = \#$
 45) Same, perpendicular, neither, parallel
 46) Neither because the slopes are not the same or opp reciprocals ($-3/4$ vs $3/4$)
 47) $-1/2$
 48) N, Parallel, Perp, N, N, N, N
 49) $5/3$, $\sqrt{34}$, $4\sqrt{34}$
 50) $-3/2$, $2/3$, $\sqrt{52} = 2\sqrt{13} \approx 7.2$
 51) -1
 52) -3
 53) $-3/4$
 54) D
 55) B
 56) C
 57) D(1,-6) O(-4,-7) G(2,3)
 58) 216
 59) X, H, X, A
 60) C
 61) (1,6)
 62) A(7, -3) B(-1,-7) C(0,0)
 63) Sub, AOE, SOE, Symm, Sub
 64) SAS, ASA, AAS, SSS, HL
 65) SSA, AAA
 66) C
 67) A&B (Use ITT and Reflexive property)
 68) B
 69) A
 70) D
 71) 76, 52
 72) 34, 76, $FR > FG > RG$
 73) A, C, D
 74) 36, 72
 75) $FG < FE < EG$