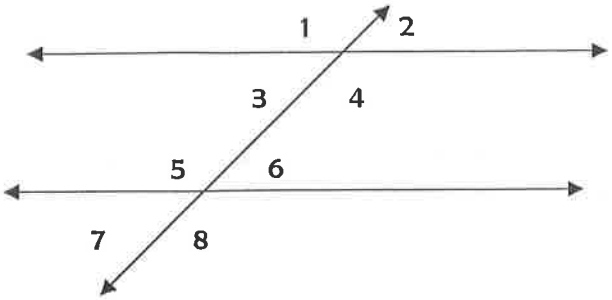
**Name** Key **Block**

**Unit 3 Review**

1. Identify types of angles




∠1 and ∠4: Vertical angles

∠5 and ∠3: same-side interior

∠2 and ∠6: corresponding

∠1 and ∠8: alternate exterior

∠3 and ∠6: alternate interior

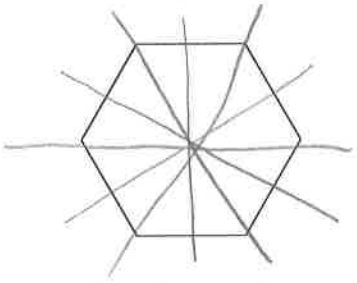
C 2. A regular polygon has
a. equal sides
b. equal angles
c. both equal angles and equal sides
d. parallel sides

C 3. A scalene triangle has
a. three equal sides
b. two or more equal sides
c. no equal sides
d. two right angles

b 4. An equiangular polygon has
a. equal sides
b. equal angles
c. both equal angles and equal sides
d. parallel sides

b 5. An isosceles triangle has
a. three equal sides
b. two or more equal sides
c. no equal sides
d. two right angles

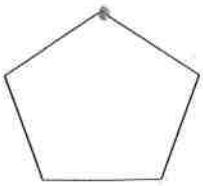
6. Sketch every axis of symmetry. Note the number of axes.



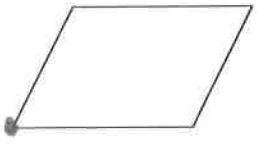
Number of axes: 6

Number of axes: 1

7. Determine the order for each figure's rotational symmetry.



Order : 5



Order: 2

| Formulas for Sum of Interior Angles, Each Angle, Sum of Exterior Angles | | | |
|---|---|---|---|
| Sum of interior = $(n-2)180°$ | Each interior = $\frac{(n-2)180}{n}$ | Sum of exterior = 360 | Each exterior = $\frac{360}{n}$ |

**8. What is the sum of the exterior angles of an 11-gon?**

360°

**9. How many sides would a regular polygon have if the sum of the interior angles is 10,620 degrees?**

$S_i = (n-2)180$

$\frac{10620}{180} = \frac{(n-2)180}{180}$

$59 = n - 2$

$+2 \quad +2$

$61 = n$

**10. What is the sum of the interior angles of a 19-gon?**

$(19-2)180$

$17 \cdot 180$

3060°

**11. How many sides would a regular polygon have if each exterior angle is 7.5 degrees?**

$E_e = \frac{360}{n}$

$\frac{7.5}{1} = \frac{360}{n}$

$7.5n = 360$

$\frac{7.5}{7.5} \quad \frac{7.5}{7.5}$

$n = 48$

**12. What is the measure of each interior angle of a regular dodecagon?**

$\frac{(12-2)180}{12} = \frac{10(180)}{12} = \frac{1800}{12}$

150°

**13. What is the exterior angle at an interior angle of 110 degrees?**

$180 - 110 = 70$

**14. What is the measure of each exterior angle of a regular 27-gon?**

$\frac{360}{27} = 13.3°$

**15. How many sides would a regular polygon have if each interior angle is 160 degrees?**

$E_i = \frac{(n-2)180}{n}$

$\frac{160}{1} = \frac{(n-2)180}{n}$

$160n = 180(n-2)$

$160n = 180n - 360$

$-180n \quad -180n$

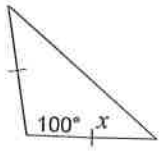
$-20n = -360$

$\frac{-20}{-20} \quad \frac{-360}{-20}$

$n = 18$

**Find the value of $x$.**

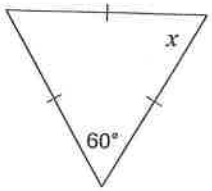
18)




180
-100
80

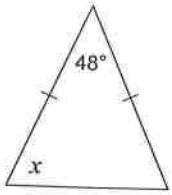
$80/2 = (40°)$

19)



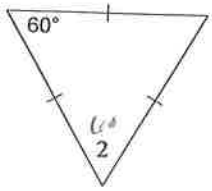

$x = (60°)$

20)



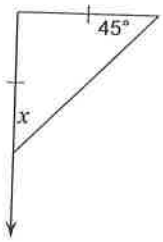

180
-48
$132/2 = (66°)$

21) $m\angle 2 = 9x + 6$



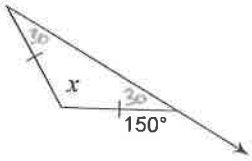

$60 = 9x + 6$
$-6 \quad -6$
$54 = 9x$
$\frac{54}{9} = \frac{9x}{9}$
$(x = 6)$

22)



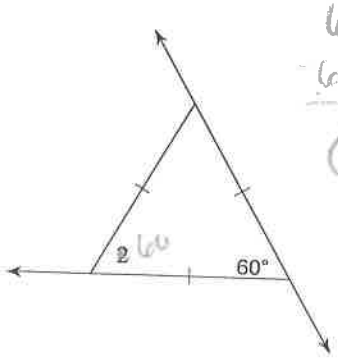

$x = (45°)$

23)



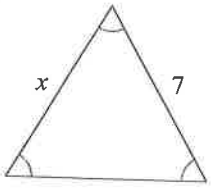

30 180
+30 -60
60 $x = (120°)$

24) $m\angle 2 = x + 68$



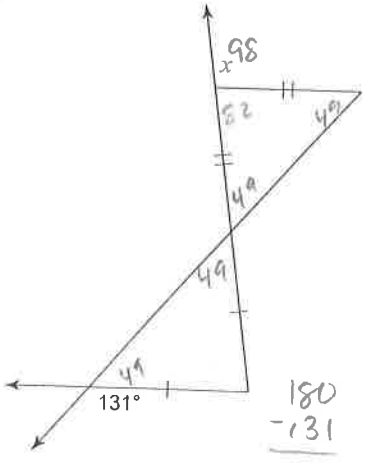

$60 = x + 68$
$-68 \quad -68$
$(-8 = x)$

25)




$(x = 7)$

26)

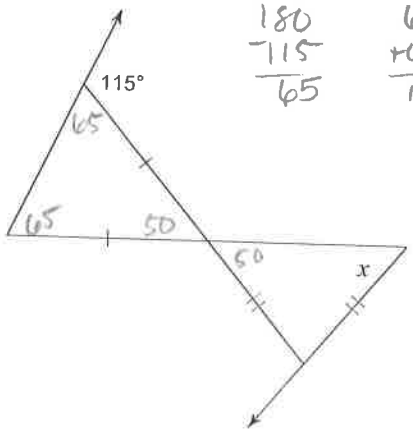



49 180
+49 -98
98 82

$(x = 98)$

180
-131
49

27)




180 65 180
-115 +65 -130
65 130 50

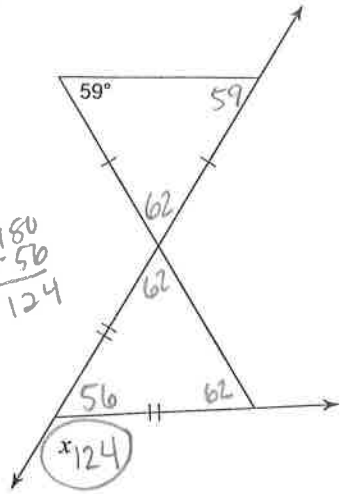
$(x = 50°)$





LLC

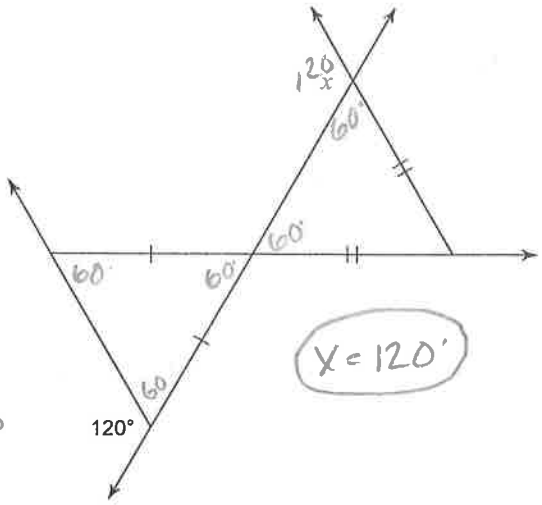
28)




59 +59 118 180 −118 62 180 −56 124 62 +62 124 180 −124 56

X = 124°

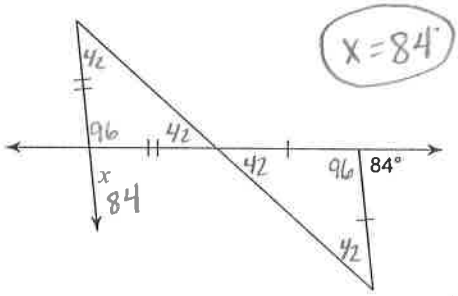
29)




180 −120 60 180 −60 120

X = 120°

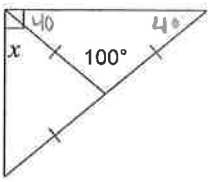
30)




X = 84°

180 −84 96 180 −96 84 84/2 = 42 42 +42 84

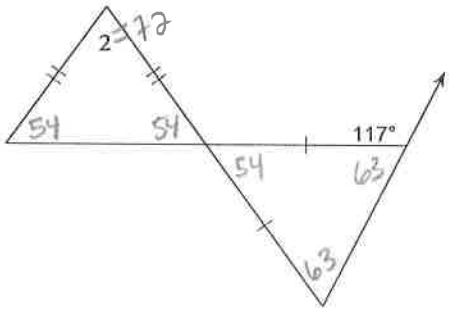
31)




X = 50

180 −100 80 80/2 = 40 90 −40 50

32) $m\angle 2 = x + 78$

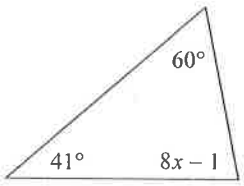



180 −117 63 63 +63 126 180 −126 54 54 +54 108 180 −108 72

72 = x + 78 −78 −78 −6 = x

**Solve for *x*.**

33)



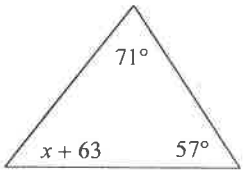

41 + 60 + 8x − 1 = 180

8x + 100 = 180 −100 −100

$\frac{8x}{8} = \frac{80}{8}$

X = 10

34)

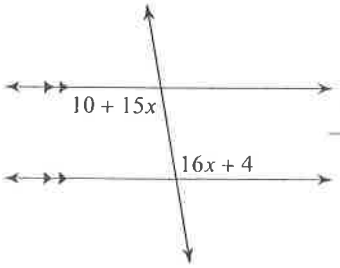



71 + 57 + x + 63 = 180

x + 191 = 180 −191 −191

X = −11

35)

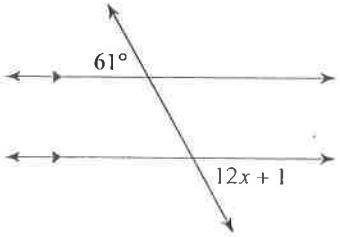



10 + 15x = 16x + 4 −15x −15x

10 = x + 4 −4 −4

6 = x

36)



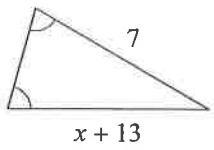

61 = 12x + 1 −1 −1

$\frac{60}{12} = \frac{12x}{12}$

5 = x

**Find the value of $x$.**

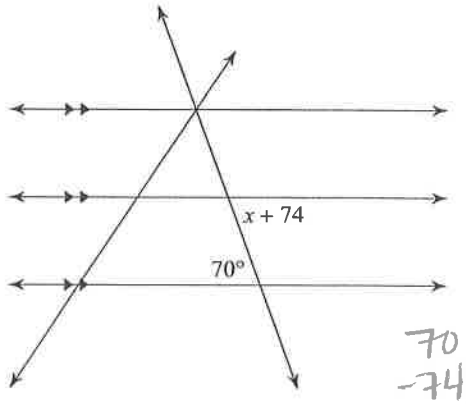
37)




$7 = x + 13$
$-13 \quad -13$
$-6 = x$

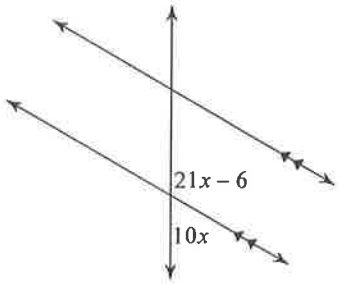
**Solve for $x$.**

38)




$70 = x + 74$
$-74 \quad -74$
$-4 = x$

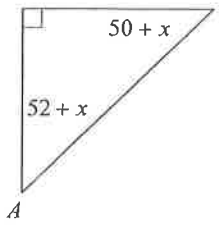
39)




$21x - 6 + 10x = 180$
$31x - 6 = 180$
$+6 \quad +6$
$31x = 186$
$31 \quad 31$
$x = 6$

**Find the measure of angle A.**

40)

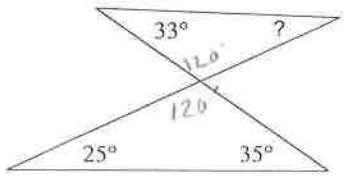



$90 + 50 + x + 52 + x = 180$
$192 + 2x = 180$
$-192 \quad -192$
$2x = -12$
$2 \quad 2$
$x = -6$

$m\angle A = 52 + x$
$= 52 + (-6)$
$m\angle A = 46°$

**Find the measure of each angle indicated.**

41)

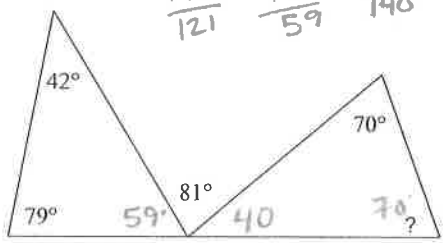



25 180
+35 −60
60 120

33 180
+120 −153
153 27

$? = 27°$

42)



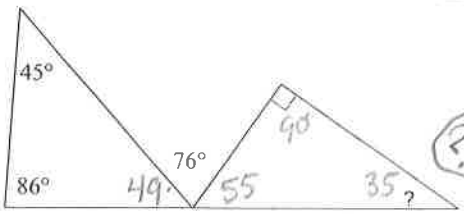

42 180
+79 −121
121 59

59 180
+81 −140
140 40

40 180
+70 −110
110 70

$? = 70°$

43)



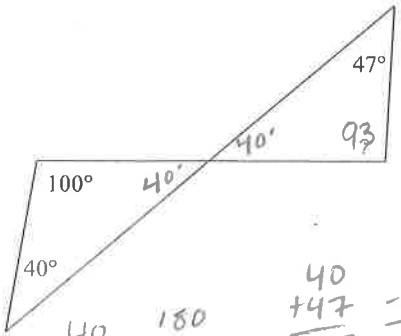

45 180
+86 −131
131 49

49 180
+76 −125
125 55

90 180
+55 −145
145 35

$? = 35°$

44)

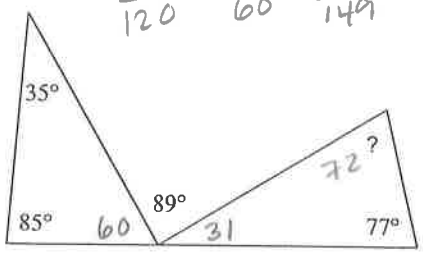



40 180
+100 −140
140 40

40 180
+47 −87
87 93

$? = 93$

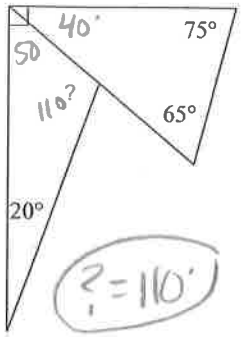
45)




135 + 85 = 120; 180 − 120 = 60; 60 + 89 = 149; 180 − 149 = 31; 31 + 77 = 108; 180 − 108 = 72

? = 72°

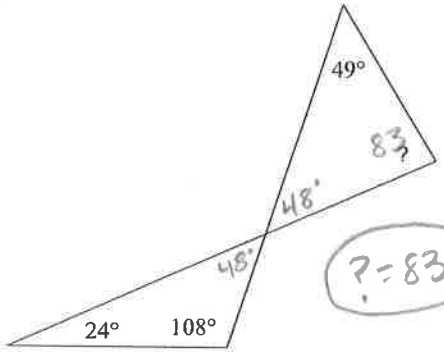
46)




75 + 65 = 140; 180 − 140 = 40; 90 − 40 = 50; 50 + 20 = 70; 180 − 70 = 110

? = 110°

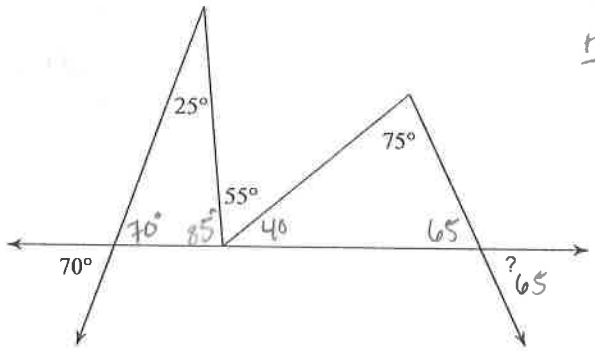
47)




24 + 108 = 132; 180 − 132 = 48; 48 + 49 = 97; 180 − 97 = 83

? = 83°

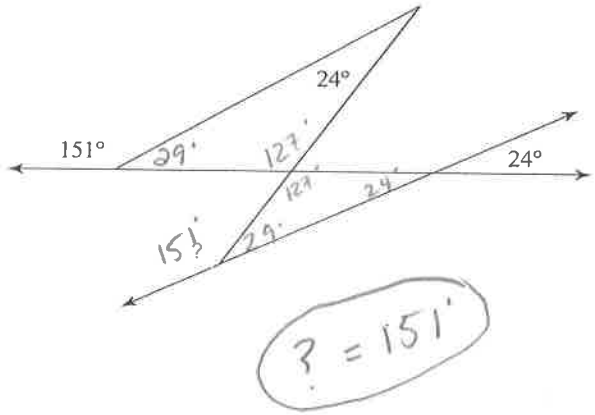
48)




70 + 25 = 95; 180 − 95 = 85; 85 + 55 = 140; 180 − 140 = 40; 40 + 75 = 115; 180 − 115 = 65

? = 65°

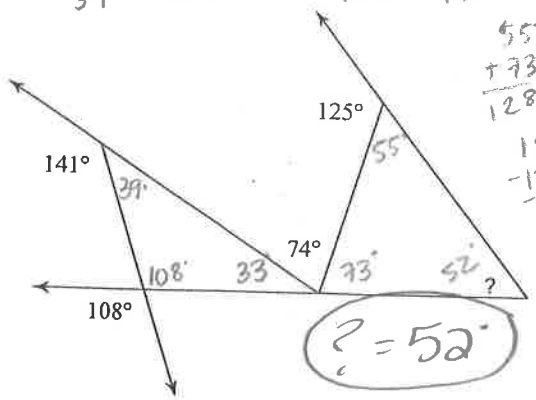
49)




180 − 151 = 29; 29 + 24 = 53; 180 − 53 = 127

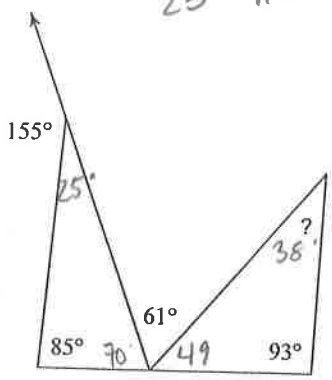
? = 151°

50) 180 − 141 = 39; 108 + 39 = 147; 180 − 147 = 33; 33 + 74 = 107; 180 − 107 = 73; 180 − 125 = 55; 55 + 73 = 128; 180 − 128 = 52



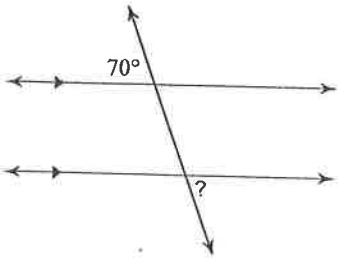

? = 52°

51) 180 − 155 = 25; 25 + 85 = 110; 180 − 110 = 70; 70 + 61 = 131; 180 − 131 = 49; 49 + 93 = 142; 180 − 142 = 38



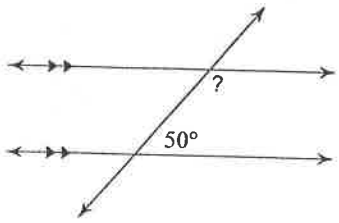

? = 38°

52)



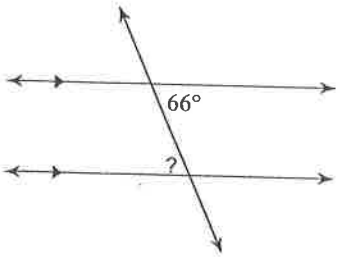

70°

53)



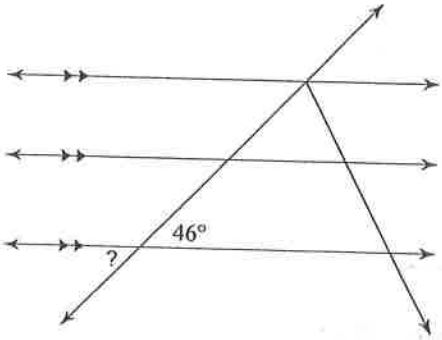

180 − 50 = 130°

54)



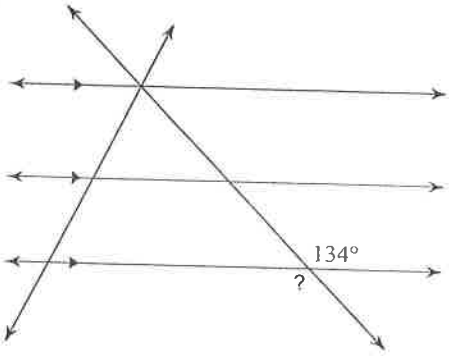

66°

55)



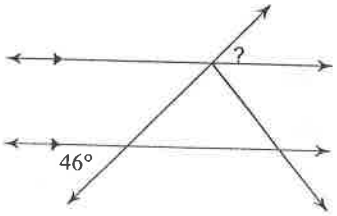

46°

56)




134°

57)




46°

**State if the three numbers can be the measures of the sides of a triangle.**

58) 8, 3, (8) 8 + 3 = 11 Yes

59) 8, (15), 7 8 + 7 = 15 NO

60) (24), 12, 9 9 + 12 = 21 NO

61) 10, (19), 9 9 + 10 = 19 NO

**Two sides of a triangle have the following measures. Find the range of possible measures for the third ide.**

62) 10, 8 $2 < x < 18$

63) 11, 12 $1 < x < 23$

64) 9, 7 $2 < x < 16$

65) 6, 6 $0 < x < 12$

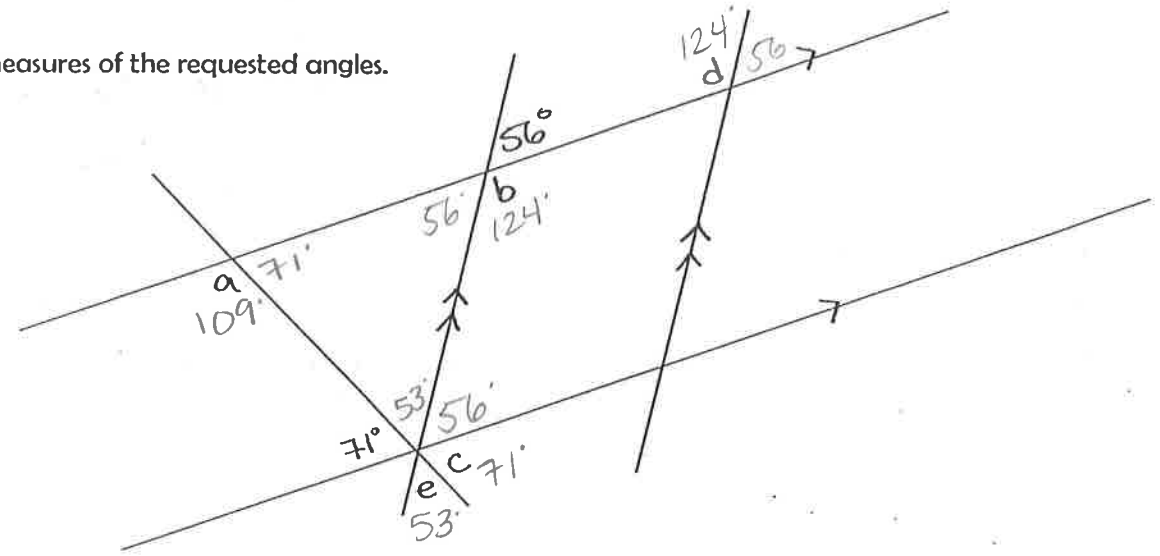
Mrs. Fucsko – Geometry

Name _____

Chapter 3 – Checkpoint #9A

Date _____

Find the measures of the requested angles.




a. 109° b. 124° c. 71° d. 124° e. 53°

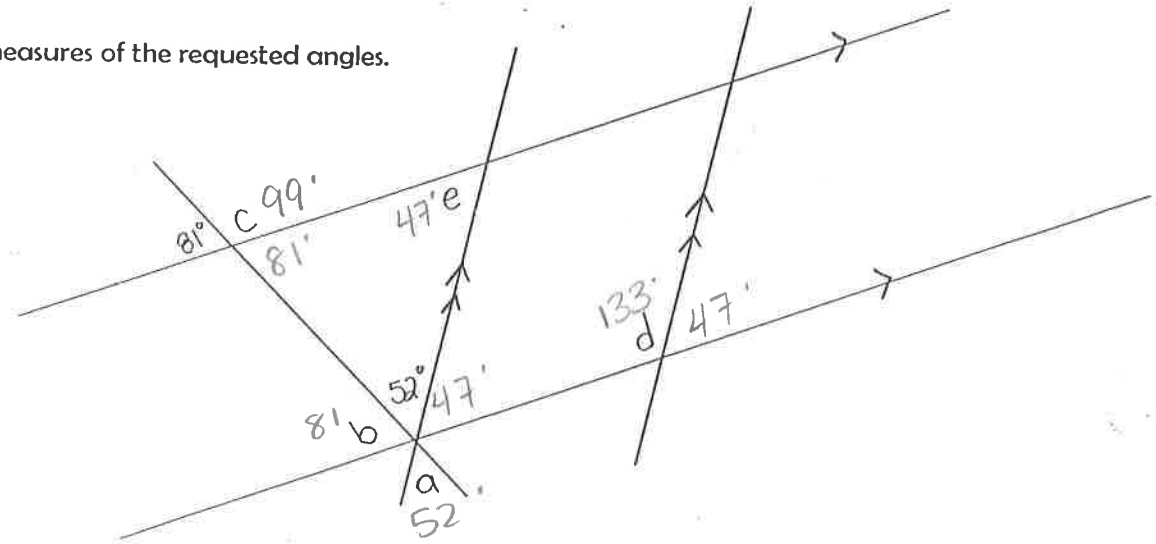
Mrs. Fucsko – Geometry

Name _____

Chapter 3 – Checkpoint #9B

Date _____

Find the measures of the requested angles.




a. 52° b. 81° c. 99° d. 133° e. 47°