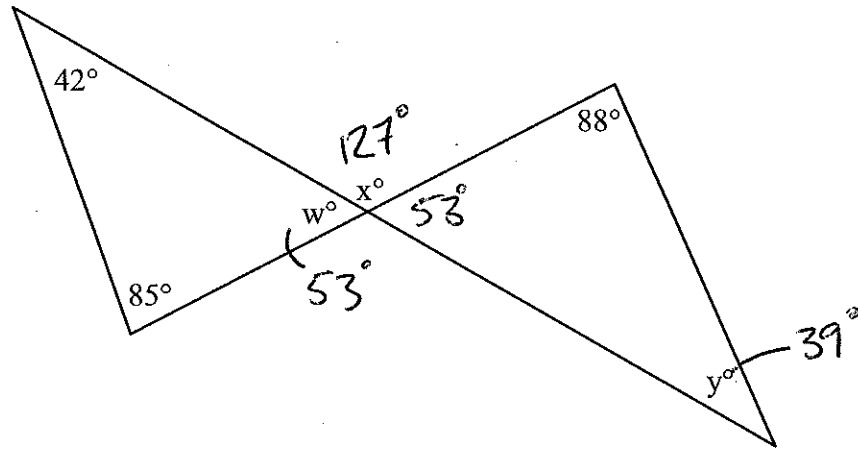5. Determine the measures of the unknown angles in the figure.

42°

127°

88°

w° x° 53°

53°

85°

53°

39°

y°

6. Determine the measures of the unknown angles in the figure.

122°

73°

y° z° 58°

x°

32°

26°

154°

75°

7. Determine the measures of the unknown angles in the figure.

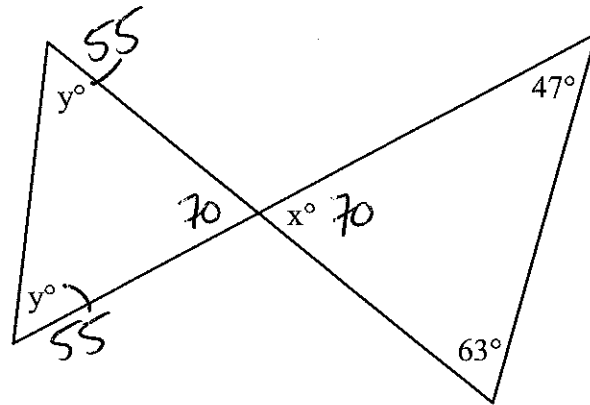34°

z°

61°

x° 119°

27°

y°

153°

8. Determine the measures of the unknown angles in the figure.

55

y°

47°

70 x° 70

y°

55

63°

9. Error Analysis: Erik and David both got the same answer when they worked the following problem. However, their teacher graded their solutions very differently. Which student, if any, was correct?
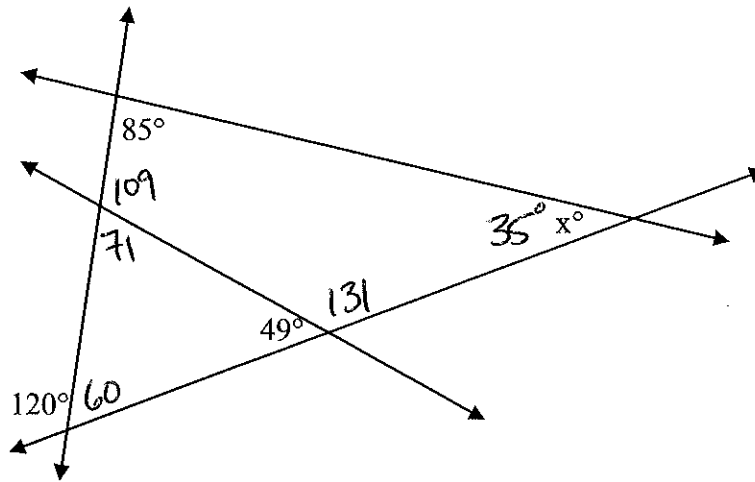
x°

144°

72°
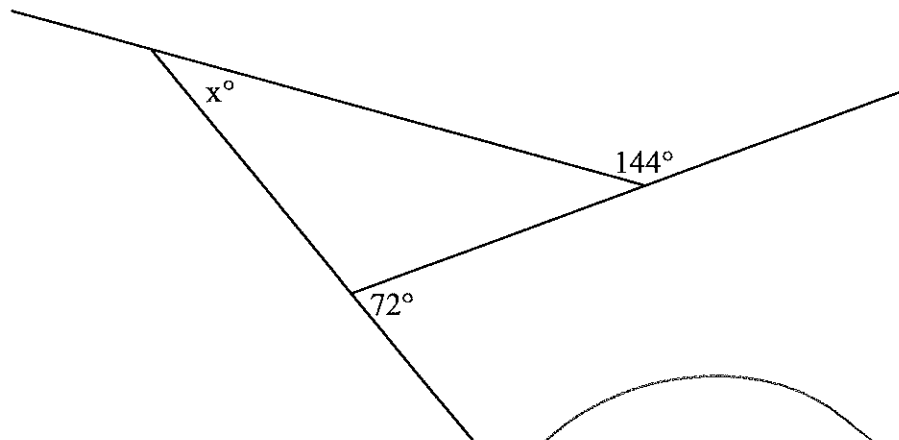
THIS
CANNOT
BE
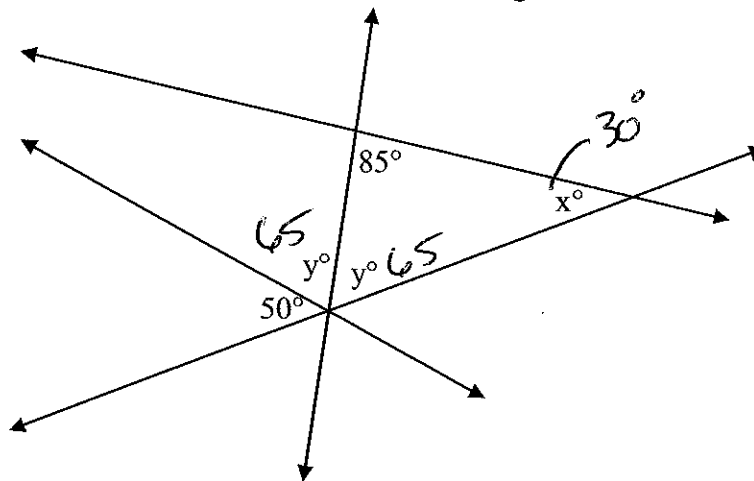TRUE

Erik's solution	David's solution
$x + 72 + 144 = 180$	$180 - 144 = 36; \quad 180 - 72 = 108$
$x + 216 = 180$	$x + 36 + 108 = 180$
$216 - 180 = 36$	$x + 144 = 180$
$x = 36°$	$-144 = -144$
	$x = 36°$

Part 3: Challenge Problems
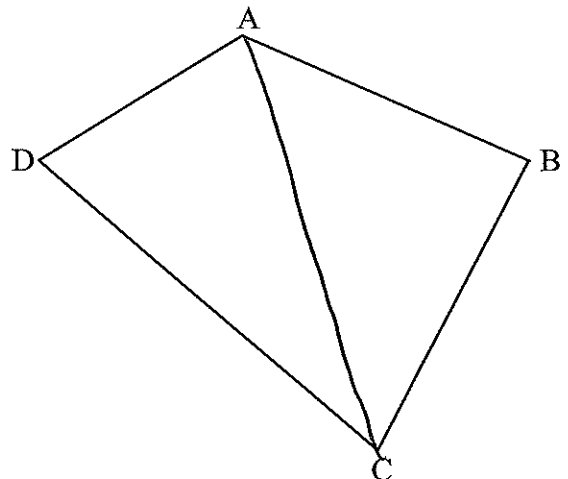
10. Determine the measure of the unknown angle.

85°
109
71
120° 60
49° 131
35° x°

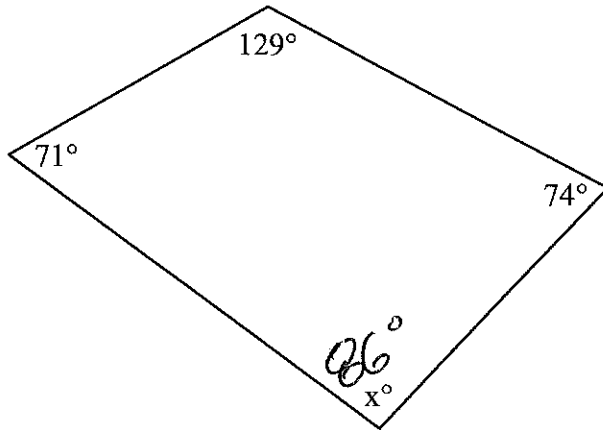11. Determine the measures of the unknown angles.

85°
65
y° y° 65
50°
30°
x°

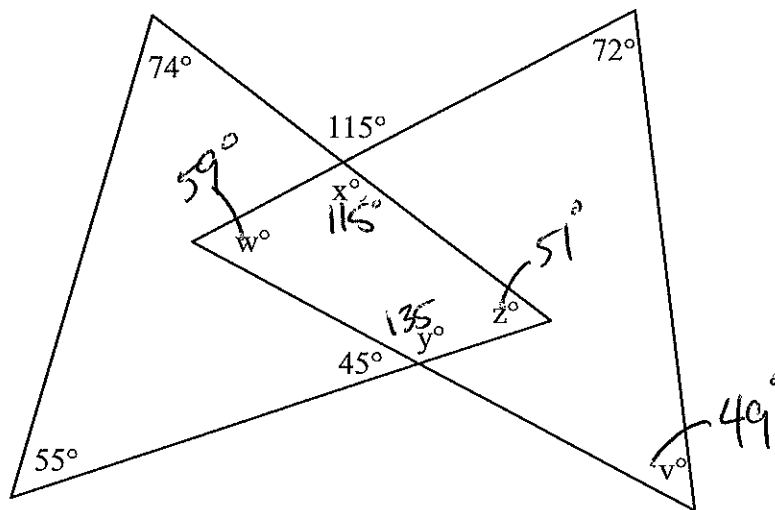12. Consider the quadrilateral (4-sided polygon) at right.

a) On the figure, draw an auxiliary line from A to C.

b) How many triangles are formed? 2

c) How many degrees, total, are in the interior angles of each triangle? 180

d) Make a conjecture: what is the sum of the interior angles in every quadrilateral? 360°

A

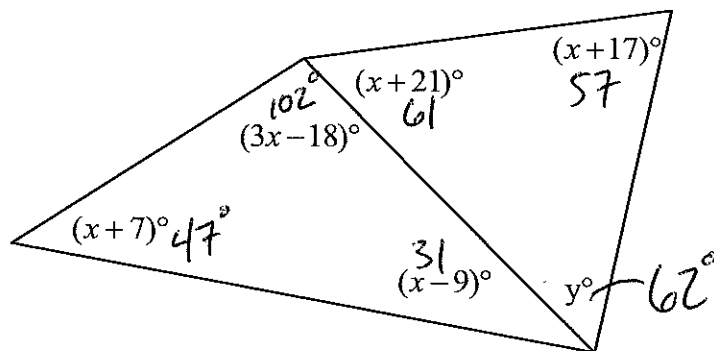D

B

C

13. Determine the value of the unknown.

129°

71°

74°

86° (handwritten)
x°

14. Determine the value of the unknowns.

74°   72°

115°

59° (handwritten)

x°
116° (handwritten)
w°

51° (handwritten)
z°

135 (handwritten)
y°

45°

49° (handwritten)
v°

55°

15. Determine the values of the unknown variables.

$(x+17)°$
57 (handwritten)

102° (handwritten)
$(x+21)°$
61 (handwritten)
$(3x-18)°$

$(x+7)°$ 47° (handwritten)

31 (handwritten)
$(x-9)°$

y° 62° (handwritten)

$x+7+3x-18+x-9=180$

$5x-20=180$

$5x=200$

$x=40$

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