Basic Geometry #2 (No parallel lines, isosceles or polygons)

One Step Problems: Find the values of the unknown angles, giving the reason.

1.

33°
a

2.

66°
39°
b

3.

84° c 44°

4.

65° d
80°

5.

134°
e

6.

44°
f

7.

92°
g 30°

8.

h
140°
65°

9.

76°
i

10.

108°
j 75°
146°

11.

k
113°

12.

61° l
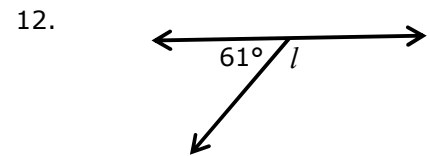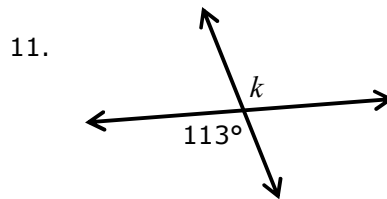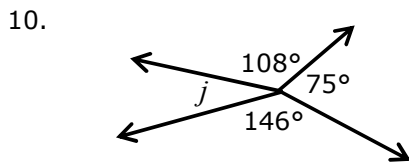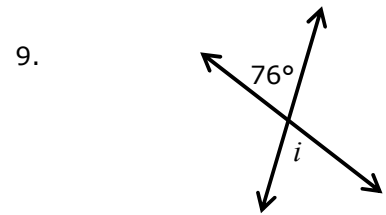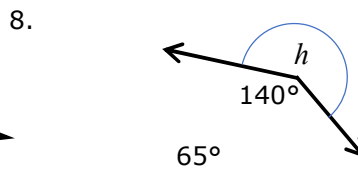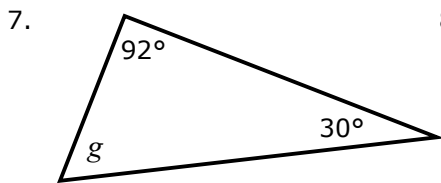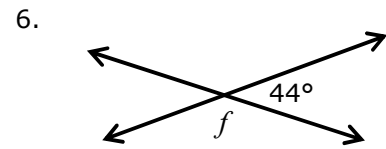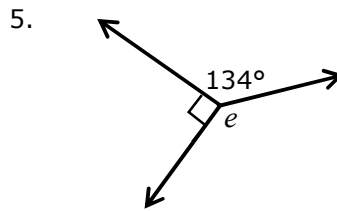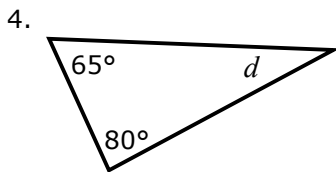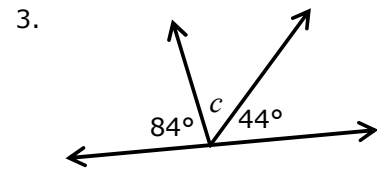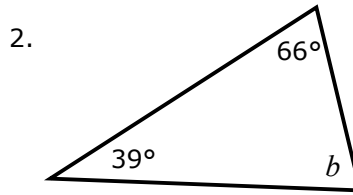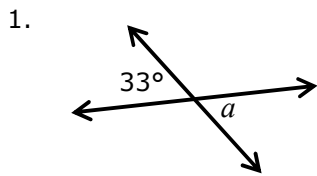
Harder Problems: Give the values of the unknown angles, giving **all** reasons.

13.

42°
76° m

14.

50° n
25°

15.

o 60°
54°

16.

90°
32° p
44°

17.

73°
q
26°

18.

52°
r 65°

19.

61°
50°
28° s

20.

t
85°
25° 75°

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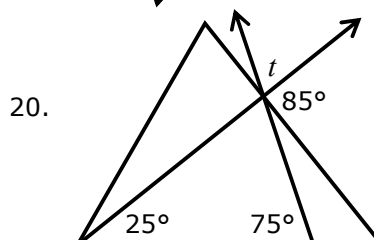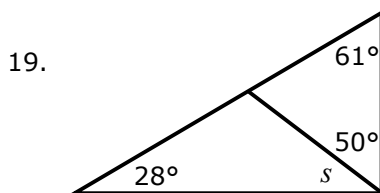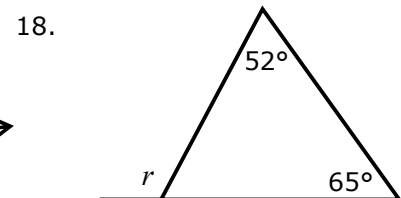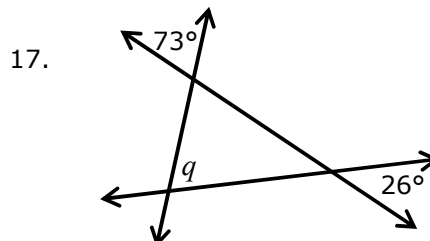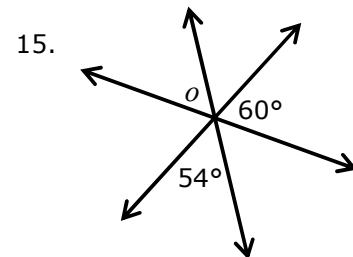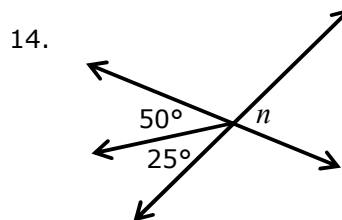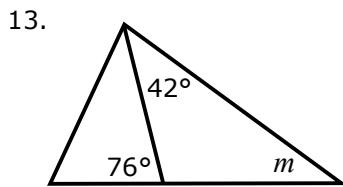
Answers : Basic Geometry #2 (No parallel lines, isosceles or polygons)

1. a = **33°**   Vertically opposite angles are equal

2. b = 180 – 39 – 66 = **75°**   Angles in a triangle add up to 180°

3. c = 180 – 84 – 44 = **52°**   Angles on a straight line add up to 180°

4. d = 180 – 65 – 80 = **35°**   Angles in a triangle add up to 180°

5. e = 360 – 134 – 90 = **136°**   Angles at a point add up to 360°

6. f = 180 – 44 = **136°**   Angles on a straight line add up to 180°

7. g = 180 – 92 – 30 = **58°**   Angles in a triangle add up to 180°

8. h = 360 – 140 = **220°**   Angles at a point add up to 360°
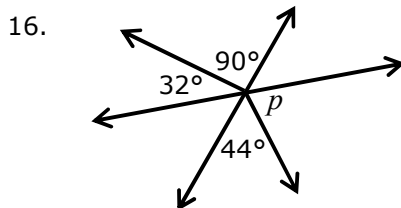
9. i = **76°**   Vertically opposite angles are equal

10. j = 360 – 146 – 108 – 75 = **31°**   Angles at a point add up to 360°

11. k = **113°**   Vertically opposite angles are equal

12. l = 360 –265 = **95°**   Angles on a straight line add up to 180°

13.   other angle triangle = 104°   Angles on a straight line add up to 180°
      m = 180 – 42 – 104 = **34°**   Angles in a triangle add up to 180°

14. n = 50 + 25 = **75°**   Vertically opposite angles are equal

15.   angle between o and 64 = 54°   Vertically opposite angles are equal
      o = 180 – 64 – 54 = **62°**   Angles on a straight line add up to 180°
      or move the 60° across as vertically opposite, and then 180 on a line

16. p + 44 = 90 + 32 = **75°**   Vertically opposite angles are equal
      p = **78°**
      or use 180° on a straight line to fill angle beside p and 44°, then use again

17.   Angles in triangle = 73° and 26°   Vertically opposite angles are equal × 2
      q = 180 – 73 – 26 = **81°**   Angles in a triangle add up to 180°

18.   beside r = 180 – 52 – 65 = 63   Angles in a triangle add up to 180°
      r = 180 – 63 = **117°**   Angles on a straight line add up to 180°

19. s = 180 – 61 – 50 – 28 = **41°**   Angles in a triangle add up to 180°

20.   top triangle = 180 – 75 – 25 = 80° Angles in a triangle add up to 180°
      t = **80°**   Vertically opposite angles are equal