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#1 $\boxed{180^\circ}$ (3) $\boxed{3}$ ~~(5)~~

(5) $\angle 1 = (180 - 131)^\circ = \boxed{49^\circ}$ $\angle 3$ is vertical to 131°
 $\Rightarrow \angle 3 = \boxed{131^\circ}$

 $\angle 2$ is vertical to 49°

$$\Rightarrow \angle 2 = \boxed{49^\circ}$$

 $\angle 4$ is corresponding to 131°

$$\Rightarrow \angle 4 = \boxed{131^\circ}$$

$$\angle 5 = \angle 1 = \boxed{49^\circ}$$

$$\angle 6 = \angle 5 = \boxed{49^\circ}$$

$$\angle 7 = \angle 4 = \boxed{131^\circ}$$

(11) the angles are Vertical Angles, so

$$5x - 129 = 2x - 21 \Rightarrow 3x = 108 \Rightarrow x = 36$$

$$\stackrel{?}{=} (5x - 129)^\circ = (5(36) - 129)^\circ = \boxed{51^\circ} \quad \leftarrow \text{check}$$

$$\text{and } (2x - 21)^\circ = (2(36) - 21)^\circ = \boxed{51^\circ}$$

(13) The three angles sum to 180°

$$\Rightarrow x + x + 20 + 210 - 3x = 180 \Rightarrow -x + 230 = 180 \Rightarrow -x = -50 \Rightarrow x = 50$$

$$\stackrel{?}{=} x^\circ = \boxed{50^\circ}; (x + 20)^\circ = (50 + 20)^\circ = \boxed{70^\circ}; (210 - 3(50))^\circ = (210 - 150)^\circ = \boxed{60^\circ}$$

(15) similar to #13

$$x - 30 + 2x - 120 + \frac{1}{2}x + 15 = 180 \Rightarrow 3.5x - 135 = 180$$

$$\Rightarrow 3.5x = 315$$

$$\Rightarrow x = 90$$

$$\stackrel{?}{=} (x - 30)^\circ = (90 - 30)^\circ = \boxed{60^\circ}$$

$$(2x - 120)^\circ = (2(90) - 120)^\circ = \boxed{60^\circ} \quad \left(\frac{1}{2}x + 15 \right)^\circ = \left(\frac{1}{2}(90) + 15 \right)^\circ = \boxed{60^\circ}$$

17. In any triangles, an exterior angle (ie $(9x+12)^\circ$) equals the sum of the remote interior angles $\Rightarrow$ (ie. $(4x-3)^\circ + (6x+3)^\circ$)

$\Rightarrow (4x-3)^\circ + (6x+3)^\circ = (9x+12)^\circ \Rightarrow 10x = 9x + 12$
 $\Rightarrow x = 12$

so $(9x+12)^\circ = (9(12)+12)^\circ = \boxed{120^\circ}$
 $(4x-3)^\circ = (4(12)-3)^\circ = \boxed{45^\circ}$
 $(6x+3)^\circ = (6(12)+3)^\circ = \boxed{75^\circ}$

19. The angles are alternate interior so they equal

$$\Rightarrow 2x-5 = x+22 \Rightarrow x = 27$$

$$\Rightarrow (2x-5)^\circ = (2(27)-5)^\circ = \boxed{49^\circ}$$

$$\Rightarrow (x+22)^\circ = (27+22)^\circ = \boxed{49^\circ}$$

21. The angles are supplementary, so $\Rightarrow$

$$(x+1) + (4x-56) = 180 \Rightarrow 5x-55 = 180 \Rightarrow x = 47$$

so $(x+1)^\circ = (47+1)^\circ = \boxed{48^\circ}$
and $(4x-56)^\circ = (4(47)-56)^\circ = \boxed{132^\circ}$

33. Right and Scalene

35. Acute and Equilateral

37. Right and Scalene

39. Right and Isosceles

41. Acute and Equilateral

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43. Acute and Isosceles

Note: the third angle
is $(180 - 50 - 50)^\circ = 80^\circ$.