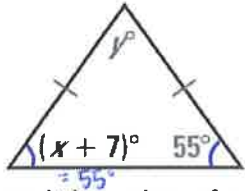


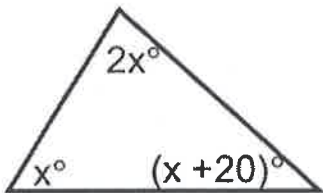
Why does Batman brush his teeth so often?

Solve each problem below. Find your answer in the answer column and notice the letter next to it. Write this letter in each box that contains the number of that problem. Keep working and you will discover the answer to the title question.

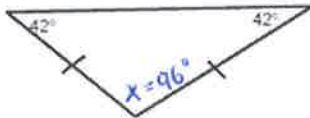
1. Find the value of x and y .



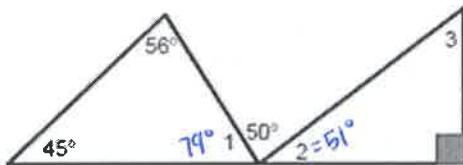
2. Find the value of x .



3. Please classify the triangle by its side lengths and its angle measures.

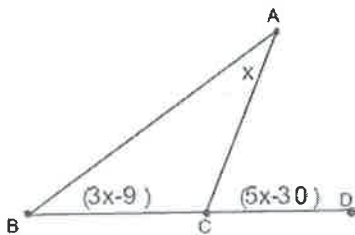


4. Please find $m\angle 1$, $m\angle 2$, $m\angle 3$.



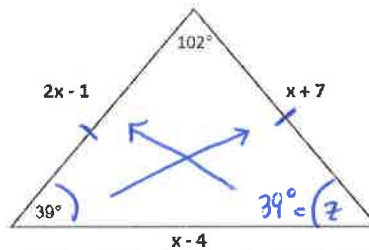
5. In $\triangle ABC$, $m\angle A = (2x + 1)^\circ$, $m\angle B = (5x + 5)^\circ$ and $m\angle C = (7x + 6)^\circ$. Please find the measures of the angles and classify the triangle by its angles.

6. Please find $m\angle B$

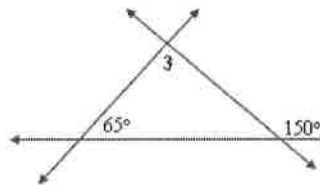


7. The lengths of the sides of an equilateral triangle are $6x$, $10x - 24$, and $2x + 24$. Please find the perimeter of the triangle.

8. Please solve for x and find the perimeter of the triangle.

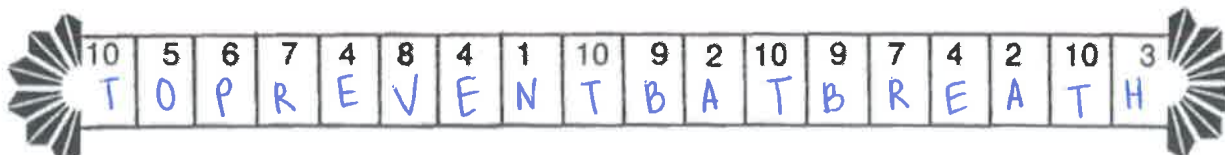


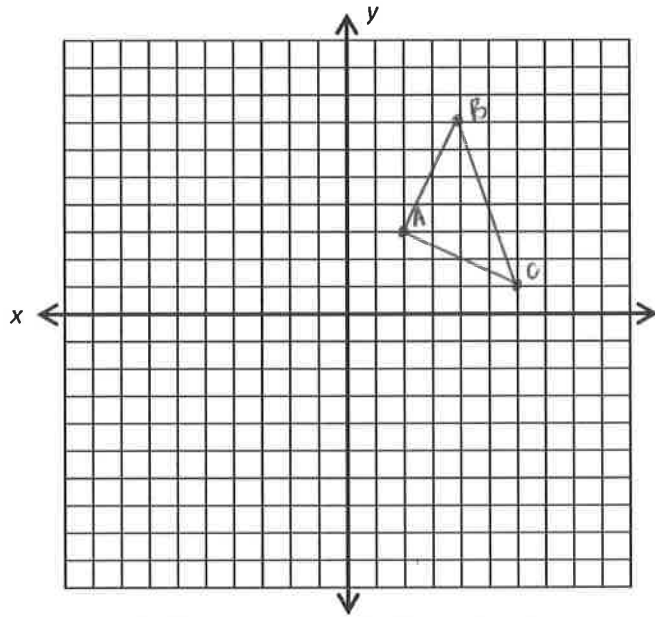
9. Please find $m\angle 3$



10. Please classify $\triangle ABC$ by its side lengths. Then determine if the triangle is a right triangle. Use the coordinate plane on the back side and make sure you show your work 😊
 $A(2, 3)$, $B(4, 7)$, $C(6, 1)$

- (K) 65
- (O) 25,65,90, right
- (R) 108
- (I) 6
- (N) 48, 70
- (M) 4, 59
- (H) Isosceles obtuse
- (B) 85
- (P) 54
- (G) 36, 72, 108
- (E) 79, 51, 39
- (L) 21
- (V) 8, 34
- (A) 40
- (S) 26
- (T) Isosceles right
- (M) 65,25,90,acute





Geo A Quiz Review Puzzle 4.1 and 4.7

N ① $x+7=55$ $55+55+y=180$
 $x=48$ $y+110=180$
 $y=70$

A ② $x+2x+x+20=180$ Angles: $x^\circ=40^\circ$
 $4x+20=180$ $x+20=60^\circ$
 $4x=160$ $2x=80^\circ$
 $x=40$ } acute Δ

H ③ $4a+4a+x=180$ Angles: $4a^\circ, 4a^\circ, 96^\circ$ ← obtuse Δ
 $x+84=180$
 $x=96$ Sides: two sides \cong so isosceles

E ④ Left Δ : $45+56+m\angle 1=180$
 $m\angle 1+100=180$
 $m\angle 1=79^\circ$

Middle section: $79+50+m\angle 2=180$
 $m\angle 2+129=180$
 $m\angle 2=51^\circ$

Right Δ : $51+90+m\angle 3=180$
 $m\angle 3+141=180$
 $m\angle 3=39^\circ$

O ⑤ $2x+1+5x+5+7x+6=180$ $m\angle A=2(12)+1=25^\circ$
 $14x+12=180$ $m\angle B=5(12)+5=65^\circ$
 $14x=168$ $m\angle C=7(12)+6=90^\circ$
 $x=12$ } Right Δ

P (6) $5x - 30 = 3x - 9 + x$

$$5x - 30 = 4x - 9$$

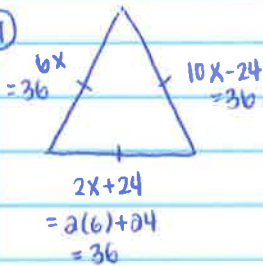
$$x - 30 = -9$$

$$\boxed{x = 21}$$

$$m\angle B = 3(21) - 9$$

$$\boxed{m\angle B = 54^\circ}$$

R (7)



*Pick 2 sides and set them equal

$$6x = 2x + 24$$

$$4x = 24$$

$$\boxed{x = 6}$$

$$\text{Perimeter} = 36 + 36 + 36$$

$$\boxed{P = 108 \text{ units}}$$

V (8) Missing angle z : $102 + 39 + z = 180$

$$z + 141 = 180$$

$$z = 39$$

Since the 2 base angles have measures of 39° , the triangle is isosceles

$$\text{so: } 2x - 1 = x + 7$$

$$x - 1 = 7$$

$$\boxed{x = 8}$$

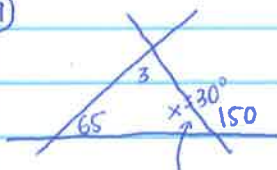
$$\text{Side lengths: } 2(8) - 1 = 15$$

$$8 + 7 = 15$$

$$8 - 4 = 4$$

$$P = 15 + 15 + 4 \Rightarrow \boxed{P = 34 \text{ units}}$$

B (9)



$$x + 150 = 180 \text{ (Linear Pair)}$$

$$x = 30^\circ$$

$$m\angle 3 + 65 + 30 = 180 \quad \leftarrow \text{triangle sum theorem}$$

$$m\angle 3 + 95 = 180$$

$$\boxed{m\angle 3 = 85^\circ}$$

$$T \text{ (10) } AB = \sqrt{(4-2)^2 + (7-3)^2} = \sqrt{(2)^2 + (4)^2} = \sqrt{4+16} = \sqrt{20}$$

$$BC = \sqrt{(6-4)^2 + (1-7)^2} = \sqrt{(2)^2 + (-6)^2} = \sqrt{4+36} = \sqrt{40}$$

$$CA = \sqrt{(6-2)^2 + (1-3)^2} = \sqrt{(4)^2 + (-2)^2} = \sqrt{16+4} = \sqrt{20}$$

ISOSCELES Δ

$$\text{Slope } \overline{AB} = \frac{7-3}{4-2} = \frac{4}{2} = 2$$

$$\text{Slope } \overline{BC} = \frac{1-7}{6-4} = \frac{-6}{2} = -3$$

$$\text{Slope } \overline{CA} = \frac{1-3}{6-2} = \frac{-2}{4} = -\frac{1}{2}$$

$\overline{AB} \perp \overline{CA}$ so Right Δ