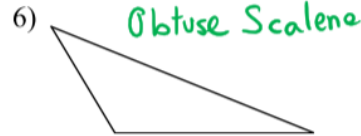
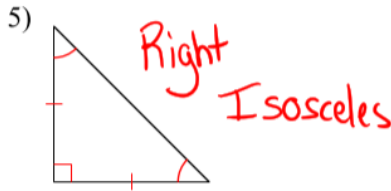
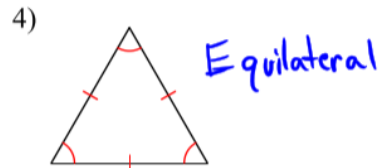
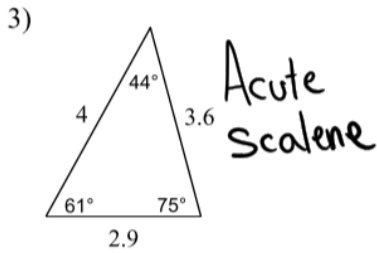
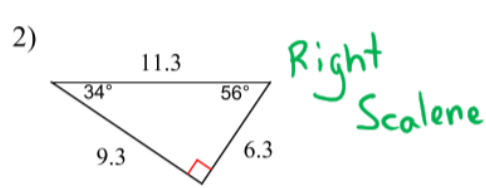
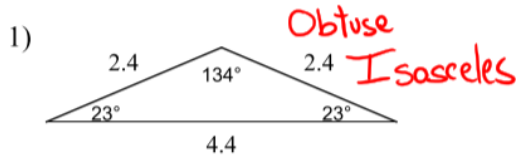
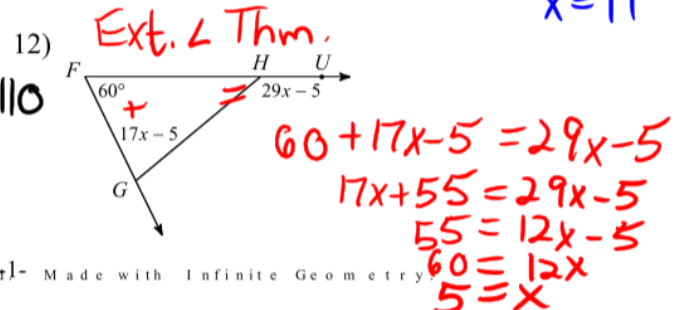
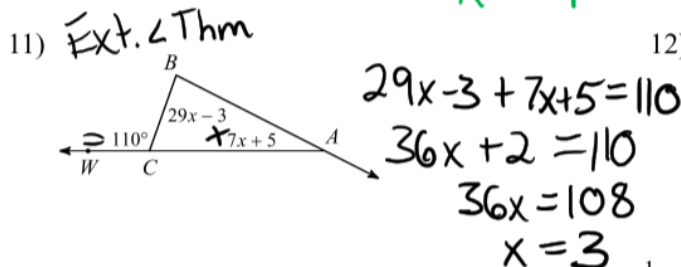
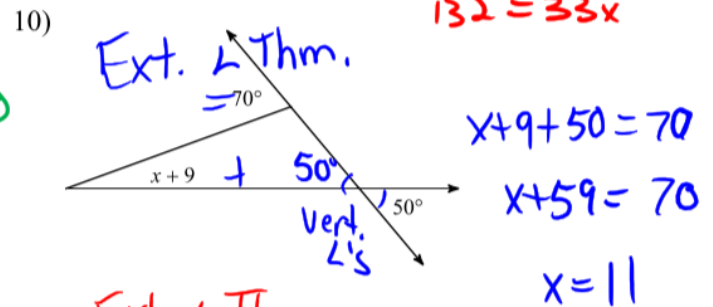
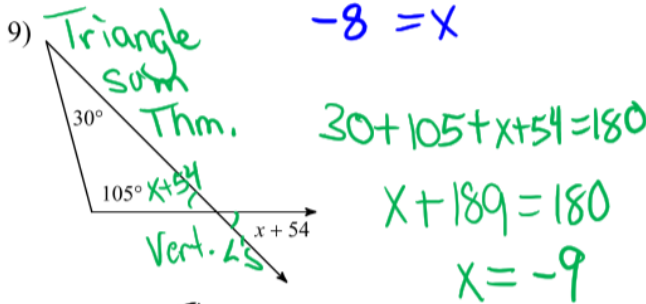
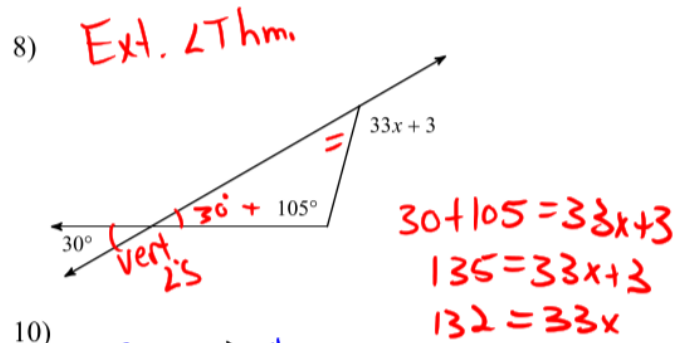
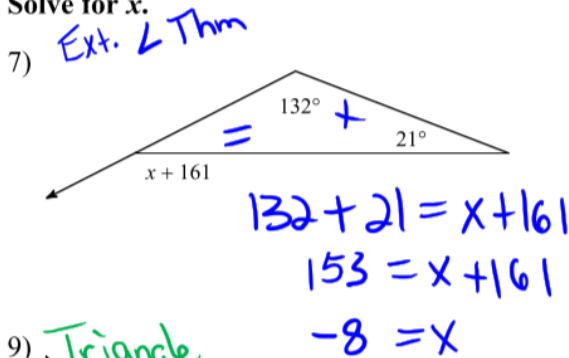


Triangle Classification and Theorems

Classify each triangle by its angles and sides.

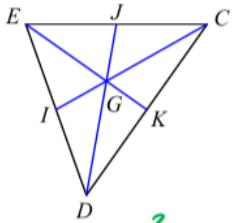


Solve for x.



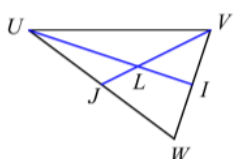
Each figure shows a triangle with one or more of its medians.

13) Find  $x$  if  $CG = x + 3$  and  $GI = 2x - 12$



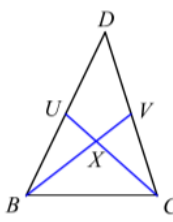
$$\begin{aligned} 2(2x-12) &= x+3 \\ 4x-24 &= x+3 \\ 3x-24 &= 3 \\ 3x &= 27 \\ x &= 9 \end{aligned}$$

15) Find  $x$  if  $UL = -9 + 2x$  and  $LI = x - 7$



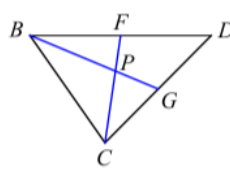
$$\begin{aligned} 3(x-7) &= -9+2x \\ 3x-21 &= -9+2x \\ x-21 &= -9 \\ 3x &= 12 \\ x &= 4 \end{aligned}$$

17) Find  $x$  if  $CX = -4 + x$  and  $CU = x - 2$



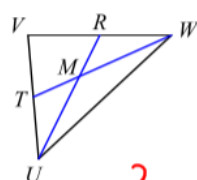
$$\begin{aligned} 3(-4+x) &= 2(x-2) \\ -12+3x &= 2x-4 \\ -12+x &= -4 \\ x &= 8 \end{aligned}$$

14) Find  $x$  if  $BG = 2x + 9$  and  $PG = -5 + 2x$



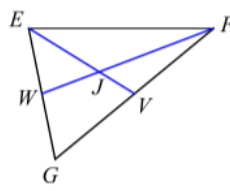
$$\begin{aligned} 3(-5+2x) &= 2x+9 \\ -15+6x &= 2x+9 \\ -15+4x &= 9 \\ 4x &= 24 \\ x &= 6 \end{aligned}$$

16) Find  $x$  if  $UM = 7 + x$  and  $UR = 2x + 7$



$$\begin{aligned} 2(2x+7) &= 3(7+x) \\ 4x+14 &= 21+3x \\ x+14 &= 21 \\ x &= 7 \end{aligned}$$

18) Find  $x$  if  $FJ = 3x - 2$  and  $JW = 2x - 2$



$$\begin{aligned} 2(2x-2) &= 3x-2 \\ 4x-4 &= 3x-2 \\ x-4 &= -2 \\ x &= 2 \end{aligned}$$

Use the Midsegment and Proportionality Theorems to solve for  $x$ .

19) *midsegment*

$$\begin{aligned} 2(2x-8) &= 2+2x \\ 4x-16 &= 2+2x \\ 2x-16 &= 2 \\ 2x &= 18 \\ x &= 9 \end{aligned}$$

20) *midsegment*

$$\begin{aligned} 2(29+2x) &= x+25 \\ 58+4x &= x+25 \\ 58+3x &= 25 \\ 3x &= -33 \\ x &= 11 \end{aligned}$$

21) *midsegment*

$$\begin{aligned} 2(x+21) &= x+30 \\ 2x+42 &= x+30 \\ x+42 &= 30 \\ x &= -12 \end{aligned}$$

22) *Proportionality*

$$\begin{aligned} \frac{6}{4} &= \frac{3x-3}{6} \\ 4(3x-3) &= 36 \\ 12x-12 &= 36 \\ 12x &= 48 \\ x &= 4 \end{aligned}$$

23) *Proportionality*

$$\begin{aligned} \frac{4x-1}{25} &= \frac{9}{5} \\ 15(4x-1) &= 225 \\ 60x-15 &= 225 \\ 60x &= 240 \\ x &= 4 \end{aligned}$$

24) *Proportionality*

$$\begin{aligned} \frac{8}{4} &= \frac{x-3}{12} \\ 8(x-3) &= 48 \\ 8x-24 &= 48 \\ 8x &= 72 \\ x &= 9 \end{aligned}$$