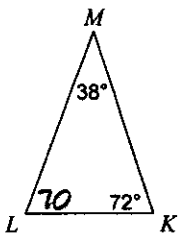
Sec 2 Honors-Triangles Unit Name Key

Unit Review

Period____

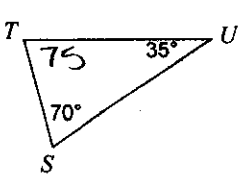
Order the sides of each triangle from shortest to longest.

1)



Short $\overline{KL}$
$\overline{KM}$
Long $\overline{LM}$

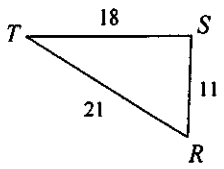
2)



Short $\overline{ST}$
$\overline{TU}$
Long $\overline{SU}$

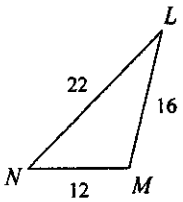
Order the angles in each triangle from smallest to largest.

3)



Sm $\angle T$
$\angle R$
Lg $\angle S$

4)



Sm $\angle L$
$\angle N$
Lg $\angle M$

State if the three numbers can be the measures of the sides of a triangle.

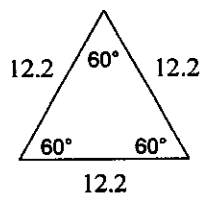
5) 7, 19, 10 $7+10 \not> 19$ No

6) 21, 10, 12 $10+12 > 21$ Yes.

Classify each triangle by its angles and sides.

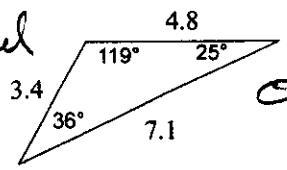
acute Scalene
Right Isosceles
Obtuse Equilateral

7)



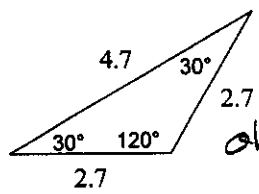
acute Equilateral

8)



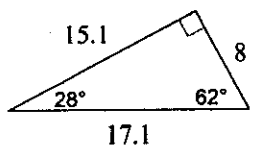
obtuse Scalene

9)



obtuse Isosceles

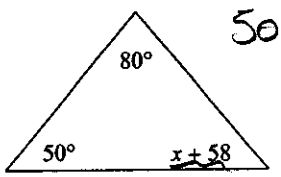
10)



Right Scalene

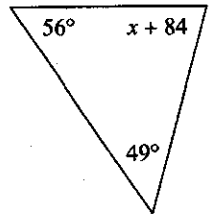
Solve for *x*.

11)



$50+80+x+58=180$
$x+188=180$
$-188 \quad -188$
$x=-8$

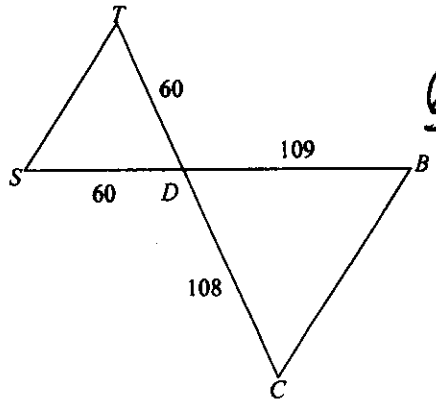
12)



$56+x+84+49=180$
$x+189=180$
$x=-9$

State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

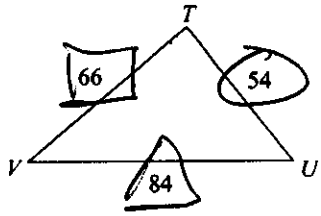
13)



$\frac{60}{109} \neq \frac{60}{109}$

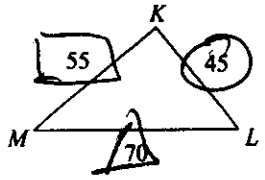
$\triangle DCB \sim$ Not Similar

14)



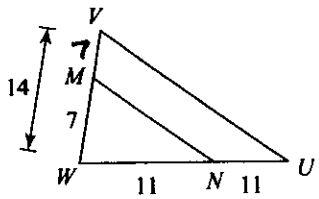
$\frac{54}{45} = \frac{66}{55} = \frac{84}{70}$

$1.2 = 1.2 = 1.2$



$\triangle TUV \sim \triangle KLM$, Similar, SSS

15)



Corresp Sides

$\frac{7}{7} = \frac{11}{11}$

Triangles

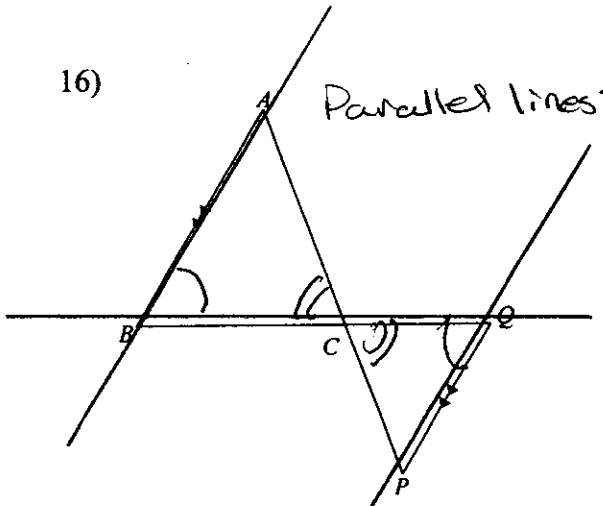
$\frac{14}{22} = \frac{7}{11}$

$\triangle WVU \sim \triangle WMN$

Similar

SAS

16)

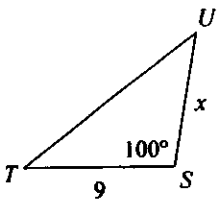


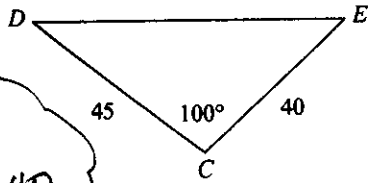
Parallel lines & Transversal

$\triangle CBA \sim \triangle CQP$, Similar, AA

Solve for x. The triangles in each pair are similar.

17)





$\frac{9}{45} = \frac{x}{40}$

$45x = 9 \cdot 40$

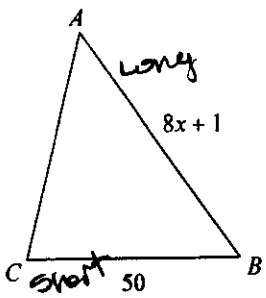
$45x = 360$

$x = 8$

or

$\frac{x}{9} = \frac{40}{45}$

18)



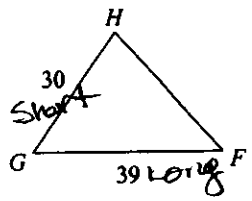
$\frac{8x+1}{39} = \frac{50}{30}$

$30(8x+1) = 50 \cdot 39$

$240x + 30 = 1950$

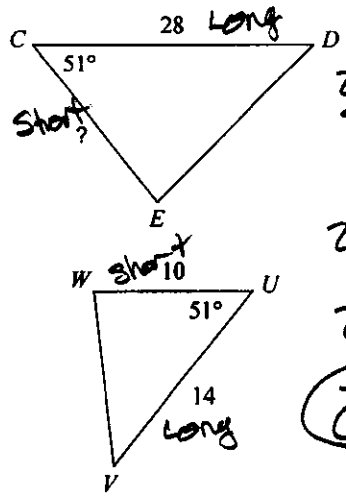
$240x = 1920$

$x = 8$



Find the missing length. The triangles in each pair are similar.

19)



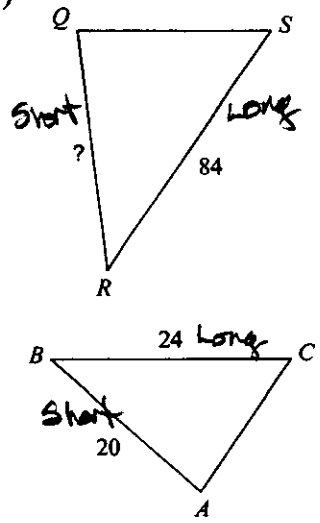
$\frac{28}{14} = \frac{x}{10}$

$280 = 14x$

$20 = x$

$\overline{CE} = 20$

20)



$\frac{84}{24} = \frac{x}{20}$

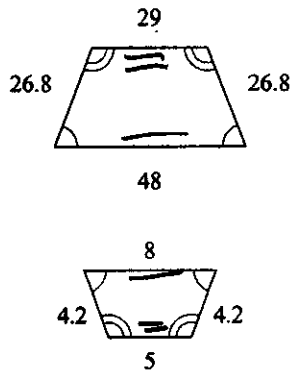
$24x = 1680$

$x = 70$

$\overline{QR} = 70$

State if the polygons are similar. If so, give the scale factor.

21)

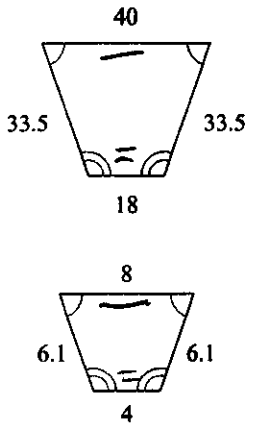


$\frac{29}{5} \stackrel{?}{=} \frac{48}{8} \stackrel{?}{=} \frac{26.8}{4.2}$

$5.8 \neq 6 \neq 6.38...$

Not Similar

22)



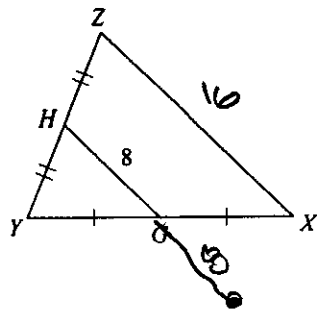
$\frac{18}{4} \stackrel{?}{=} \frac{40}{8} \stackrel{?}{=} \frac{33.5}{6.1}$

$4.5 \neq 5 \neq 5.49...$

Not Similar

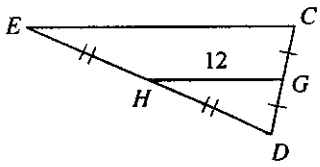
Find the missing length indicated. Notice the inside line is a midsegment.

23) Find XZ



$\overline{ZX} = 16$

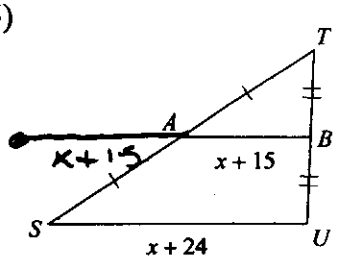
24) Find CE



$CE = 24$

Solve for x.

25)



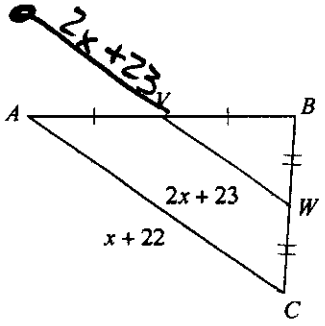
$x+15+x+15 = x+24$

$2x+30 = x+24$

$x+30 = 24$

$x = -6$

26)



$2x+23+2x+23 = x+22$

$4x+46 = x+22$

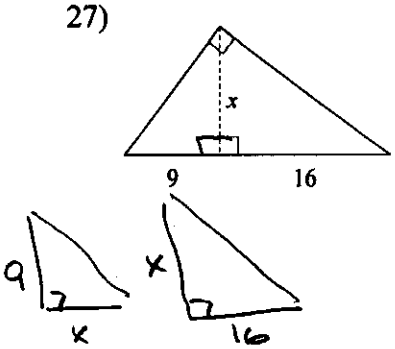
$3x+46 = 22$

$3x = -24$

$x = -8$

Find the missing length indicated.

27)

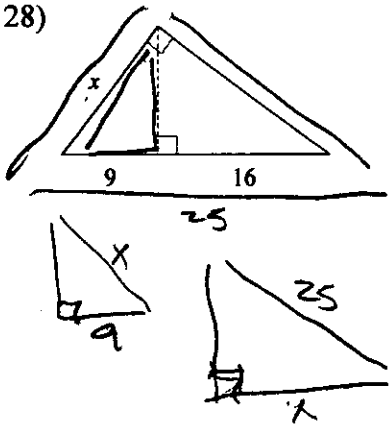


$\frac{9}{x} = \frac{x}{16}$

$\sqrt{x^2} = \sqrt{144}$

$x = 12$

28)



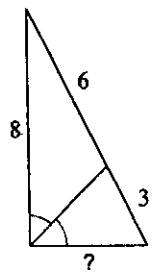
$\frac{x}{9} = \frac{25}{x}$

$\sqrt{x^2} = \sqrt{225}$

$x = 15$

Find the missing length indicated.

29)



Triangle to Triangle

$\frac{adj}{opp} = \frac{adj}{opp}$

$\frac{8}{6} = \frac{x}{3}$

$24 = 6x$

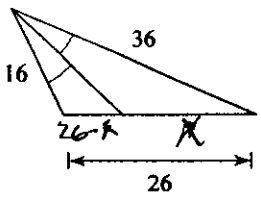
$4 = x$

or

Corresp

$\frac{8}{x} = \frac{6}{3}$

30)



$\frac{16}{26-x} = \frac{36}{x}$

$16x = 36(26-x)$

$16x = 936 - 36x$

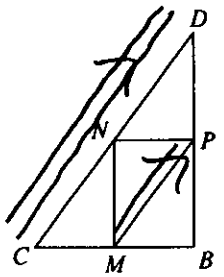
$+36x \quad +36x$

$52x = 936$

$x = 18$

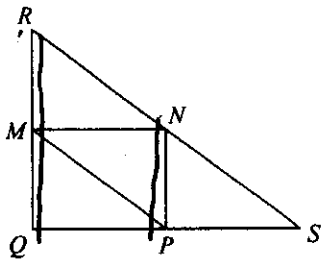
In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

31)



$\overline{MP} \parallel \overline{CD}$ (or $\overline{CN}$, $\overline{ND}$)

32)



$\overline{QR} \parallel \overline{NP}$

33) List 4 ways to prove that 2 triangles are similar.

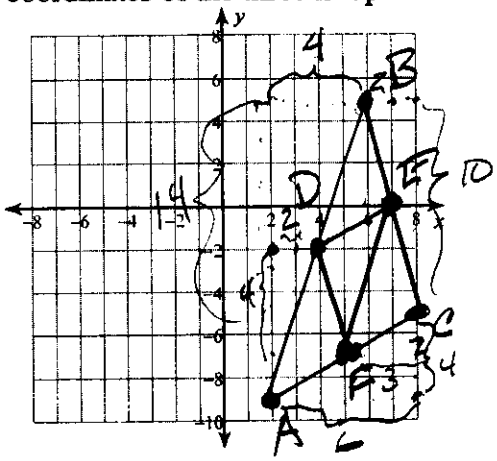
1. Dilation
2. SSS
3. SAS
4. AA

34) List the properties of dilation.

1. Same orientation, Shape
2. Same scale factor (k)
3. Corresp. Side Parallel (Slope)
4. Colinear Points.

35) a. A(2, -9) B(6,5) and C(8,-5) Plot the points and connect them to create $\triangle ABC$.

b. Find the midpoints of each segment and connect them to create the midsegment triangle. List the coordinates of the three midpoints below.

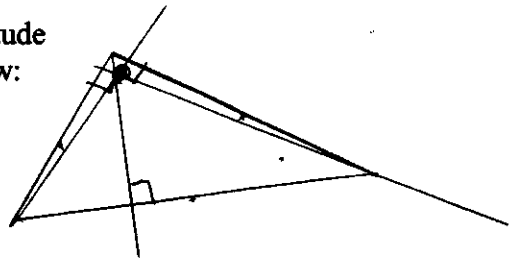


ADEF

D(4,-2) E(7,0) F(5,-7)

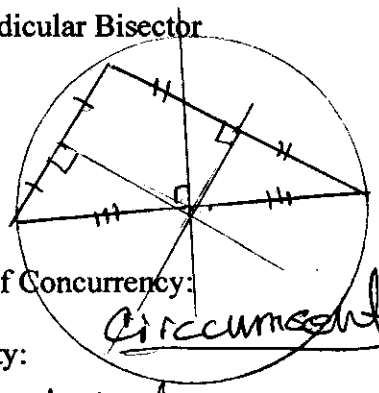
Draw an example of the following. Include all necessary markings. Then state which point of concurrency is formed by making all three and state one property about that point.

36) Altitude
Draw:



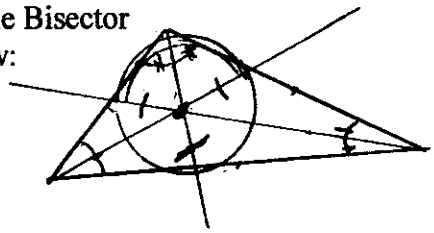
Point of Concurrency:
Property: Altitude
height of triangle

37) Perpendicular Bisector
Draw:



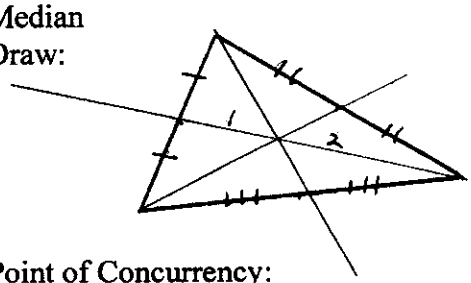
Point of Concurrency: Circumcenter
Property: Center of circumscribed circle (outside)

38) Angle Bisector
Draw:



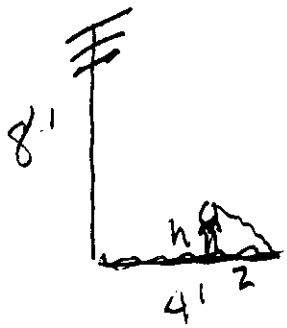
Point of Concurrency:
Property: Incenter
Center of inscribed circle

39) Median
Draw:



Point of Concurrency:
Property: Centroid
Center of gravity

40) A telephone booth that is 8 ft tall casts a shadow that is 4 ft long. Find the height of a lawn ornament that casts a 2 ft shadow.



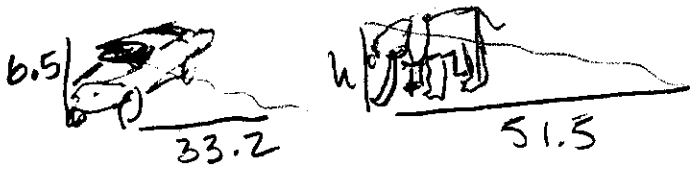
$\frac{8}{4} = \frac{h}{2}$

$16 = 4h$

$4' = h$

4 feet

41) A 6.5 ft tall car standing next to an adult elephant casts a 33.2 ft shadow. If the adult elephant casts a shadow that is 51.5 ft long then how tall is it?



$\frac{6.5}{33.2} = \frac{h}{51.5}$

$33.2h = 6.5(51.5)$

$33.2h = 334.75$

$h = 10.082\ldots$

10 feet tall