Geo 3-7 HW Ans

(1) remote int ∠'s must be less than ext ∠

$\boxed{0 < m\angle 3 < 112°}$

(2) $m\angle 4 > m\angle 1$

$3x+7 < 134$ (remote int ∠ ext)

$3x < 127$

$\boxed{x < \frac{127}{3}}$

$m\angle 4 > 0$ (to exist)

$3x+7 > 0$

$-7 \quad -7$

$\frac{3x}{3} > \frac{-7}{3}$

$\boxed{x > \frac{-7}{3}}$

(3) $10x-2 = 4x+4+5x+8$ (ext ∠ = sum remote int)

$10x-2 = 9x+12$

$\boxed{x = 14}$

$m\angle 4 = 5(14)+8 = 78°$

$180-78 = \boxed{102° = m\angle 5}$

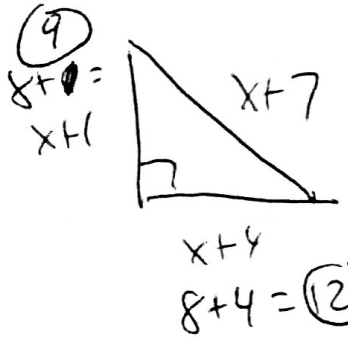
($\angle 4, \angle 5$ lin pair, supp)

(4) $\angle 3, \angle 8, \angle 9, \angle 1$ → all are remote int to $\angle 5$ as ext ∠

so they are less than $\angle 5$

(5) $\angle 3$ and $\angle 5$ are both ext ∠'s to Δ's that $\angle 1$ is in

so they are both larger than their remote int $\angle 1$

(6) 

$8+4=12$

$A=\frac{1}{2}(9)(12)=54$

$(x+1)^2+(x+4)^2=(x+7)^2$

$x^2+2x+1+x^2+8x+16=x^2+14x+49$

$2x^2+10x+17=x^2+14x+49$

$x^2-4x-32=0$

$(x-8)(x+4)=0$

$x=8$ ~~$x=-4$~~ neg side

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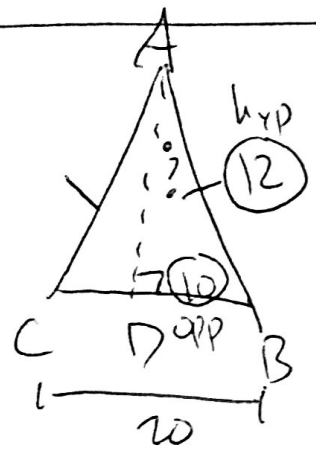
(7) 

P → 44 $\quad 44-20=\frac{24}{2}=$ 12 = AB = AC

$\sin ? = \frac{10}{12}$

? = 56.4°

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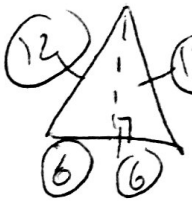
(8) 

P → $\frac{36}{3}=12$ → each side

$6^2+x^2=12^2 \rightarrow x=\sqrt{108}$

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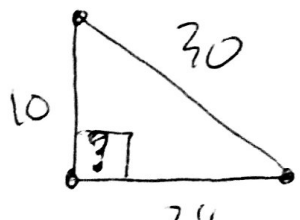
(9) 

$30^2 \stackrel{?}{=} 10^2+24^2$

$900=676$ X

Since "hyp²" is larger it is an obtuse Δ

Not a rT Δ, pythag Theorem not true