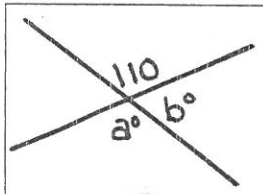
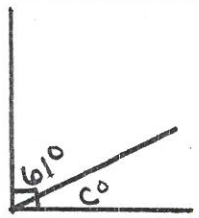
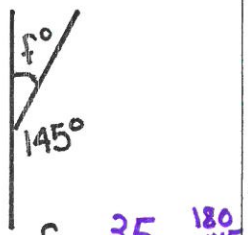
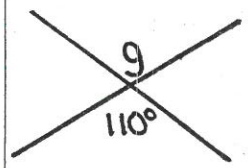
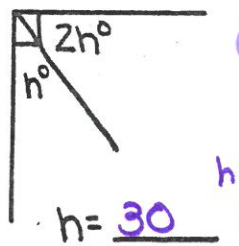
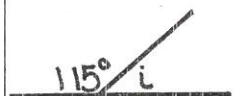
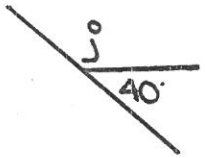
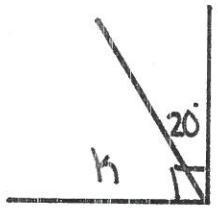
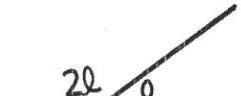
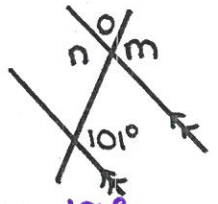
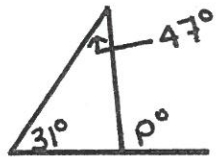
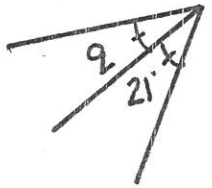
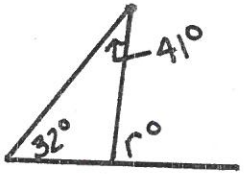
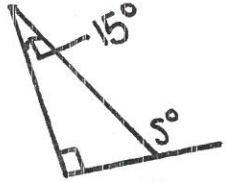
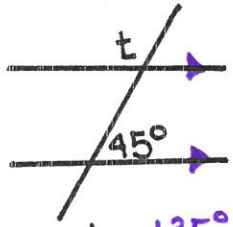
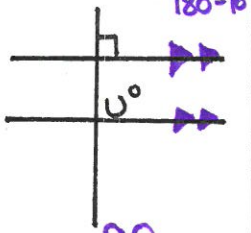
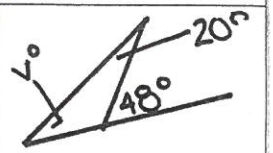
Unit 4 "Placemat"

*NEVER assume pictures are to scale. Use given info ONLY! (and what you know 😉)

①

 a = 110° b = 70 (180-110)	 c = 29 (90-61)	 d = 101 e = 79 (180-101)	 f = 35 (180-145)	 g = 110	 h = 30 h+2h=90 3h=90
 i = 65 (180-115)	 j = 140° (180-40)	 k = 70° (90-20)	 ℓ = 60° 3ℓ=180	 m = 101° n = 101° o = 79° (180-101)	 p = 78 (47+31)
 q = 21°	 r = 73 (32+41)	 s = 105 (90+15)	 t = 135° (180-45)	 u = 90	 v = 28 (48 = v+20)

Fix t, u we need || markings

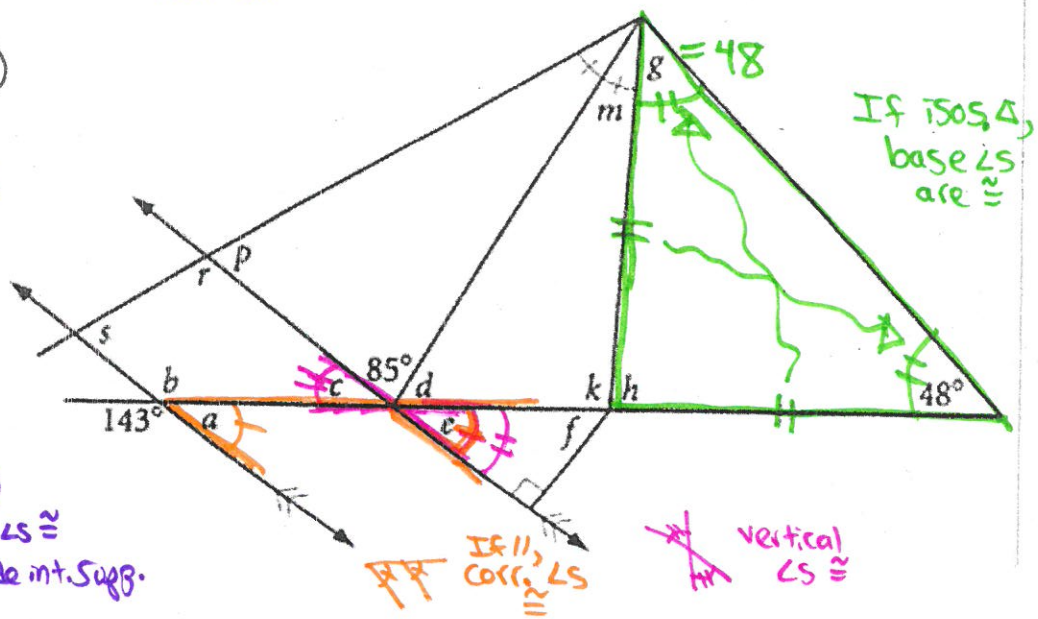
a = 37° (180-143)
b = 143° (vertical ∠s ≅)
c = 37° (alt int ∠s ≅ if lines ||)
d = 58° (180-85-37)
e = 37° (vertical ∠s ≅)
f = 53° (180-90-37)
g = 48° (base ∠s ≅ if isos △)
h = 84° (180-48-48)
k = 96° (180-84)
m = 26° (180-96-58)

②

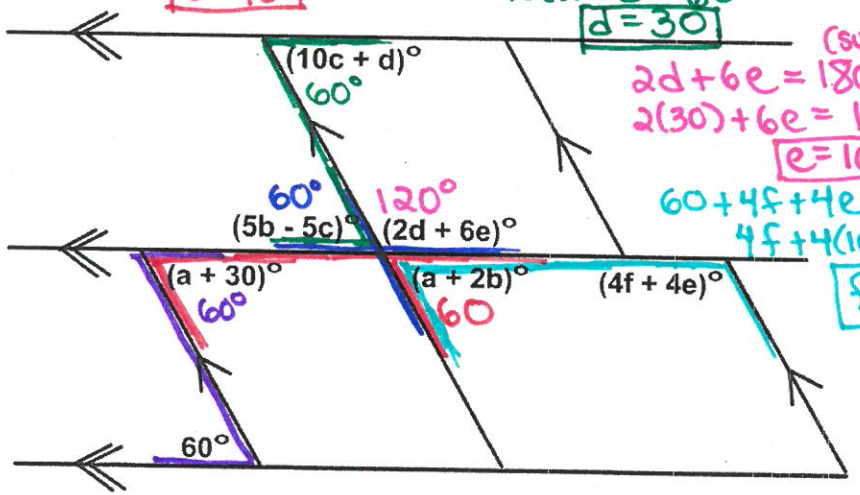
p = 69° (180-85-26)

r = 111 (180-69) OR 85+26

s = 69° (360-143-37-111) OR corresp. ∠s ≅ OR same side int. Supp.



③



$a+30=60$ ($\angle$s $\cong$)

$a=30$

$a+2b=60$ (if ll, corr. $\angle$s $\cong$)

$30+2b=60$

$b=15$

$5(15)-5c=60$ ($\angle$s $\cong$)

$5c=15$ $c=3$

$10c+d=60$ (if ll, alt. int. $\angle$s $\cong$)

$10(3)+d=60$

$d=30$

(supp $\angle$s)

$2d+6e=180-60$

$2(30)+6e=120$

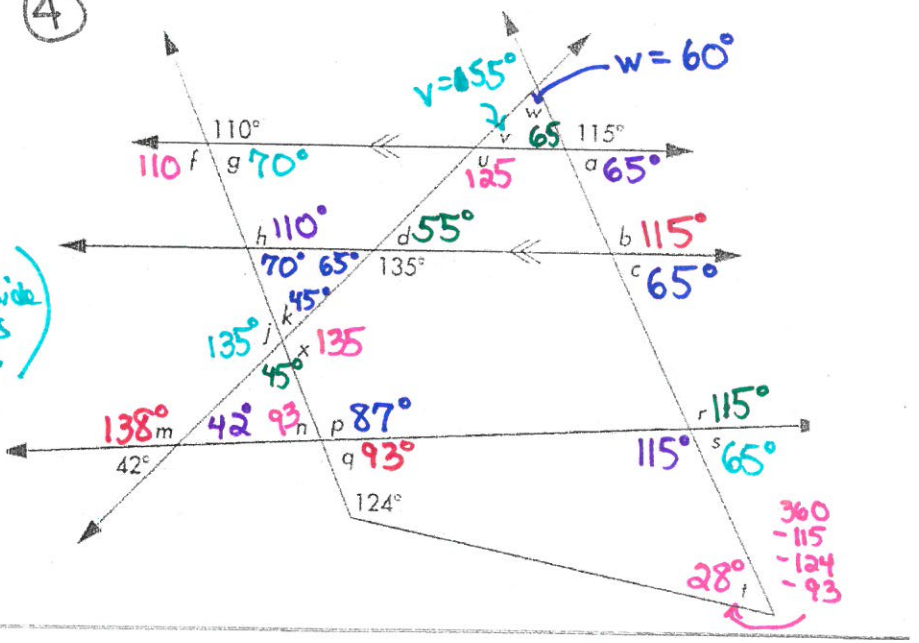
$e=10$

$60+4f+4e=180$ (if ll, same side int $\angle$s supp.)

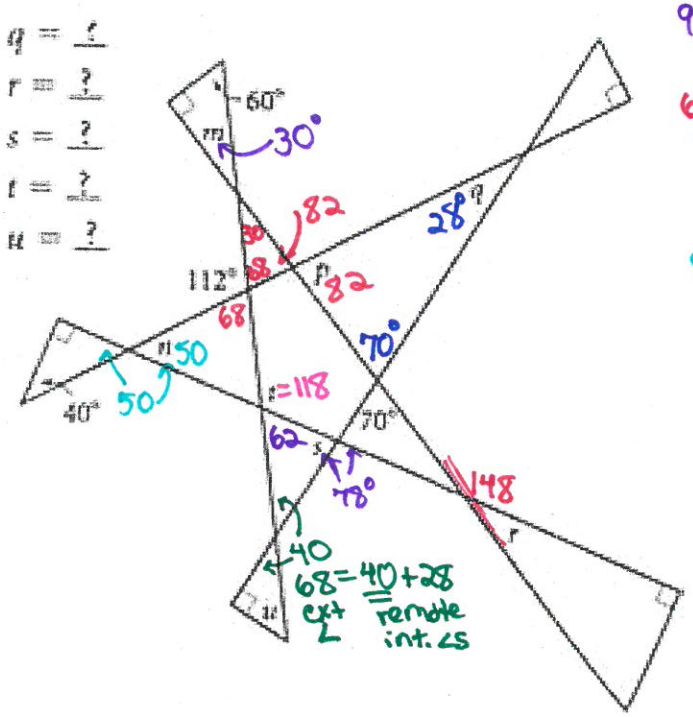
$4f+4(10)=120$

$f=20$

④



⑤



$90-60=30=m$

$68+30=98$

$180-98=82$

$p=82°$

$90-40=50=n$

$t=50+68$ ext $\angle$ = sum of 2 remote int $\angle$s

$t=118°$

$180-82-70$

$28°=q$

$180-62-40$

$s=78°$

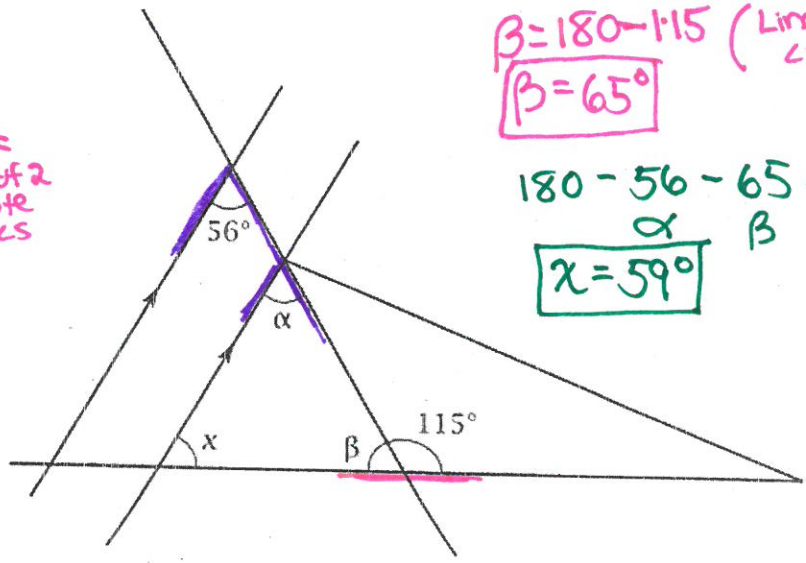
$180-90-40$

$v=50°$

$180-148$

$32=r$

⑥



$\alpha=56°$ (If ll, corr. $\angle$s $\cong$)

$\beta=180-115$ (Linear pair $\angle$s are supp.)

$\beta=65°$

$180-56-65=x$ (sum of $\angle$s in $\triangle$ = 180°)

α β

$x=59°$