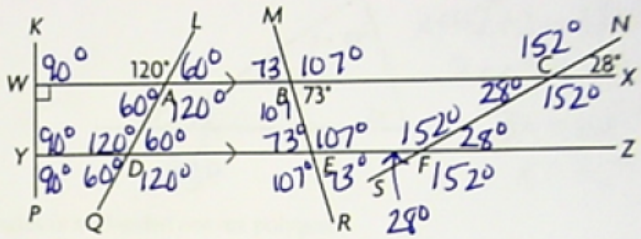
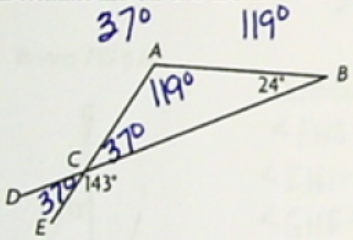
Unit Four: Geometry

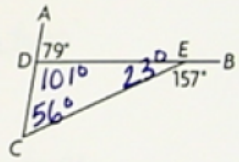
1. Determine the measure of all unknown angles



2. Detemine $\angle DCE$ and $\angle CAB$?



3. Determine the correct measures of the interior angles of ΔCDE



4. a. Determine the sum of the measures of the interior angles of this polygon.
b. Are each angle the same measure

(a) $180(8-2) = 1080^\circ$

(b) NO, sides are not equal

5. Each interior angle of a regular convex polygon measures 144°. How many sides does the polygon have?

$\frac{180(n-2)}{n} = 144$ 10 sides

$180(n-2) = 144n$

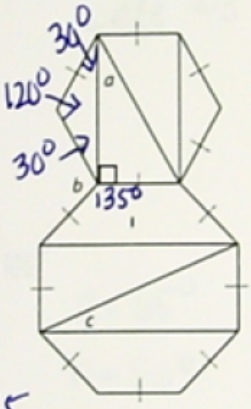
$180n - 360 = 144n$

$180n - 144n = 360$

$36n = 360$

$n = 10$

6. Determine the value of b.



6 sides $180(6-2) = 720$

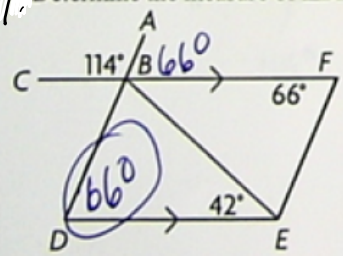
$\frac{720}{6} = 120^\circ$

8 sides $180(8-2) = 1080$

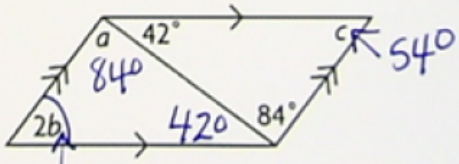
$\frac{1080}{8} = 135$

$\angle b = 105^\circ$

7. Determine the measure of $\angle BDE$.



8. Determine the values of a, b, and c.



$2b = 54$

$\therefore b = 27$

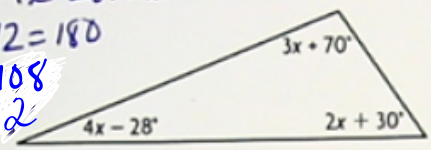
9. Determine the value of x.

$3x+70+4x-28+2x+30=180$

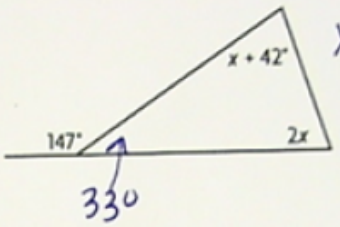
$9x+72=180$

$9x=108$

$x=12$



10. Determine the value of x.



$x+42^\circ+2x+33=180^\circ$

$3x+75=180$

$3x=105^\circ$

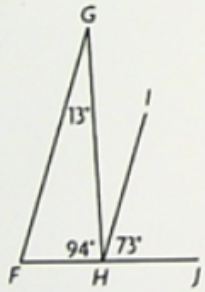
$x=35^\circ$

11. Determine the sum of the measures of the angles in a 13-sided convex polygon. Show your calculation.

$180(13-2)$

$=1980^\circ$

12. Prove: $FG \parallel HI$

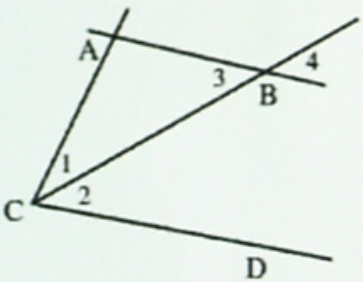


state.	justification
$\angle FHG=94^\circ$	Given
$\angle IHJ=73^\circ$	Given
$\angle GHI=13^\circ$	Supplementary
$\angle FGH=13^\circ$	Given
$\angle FGH=\angle GHI$	proven
$FG \parallel HI$	equal alt $\angle$s

13. Given $AB \parallel CD$

$\angle 1 = \angle 4$

Prove: $\angle 1 = \angle 2$

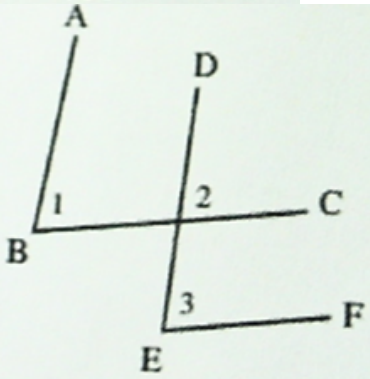


Statement	reason
$AB \parallel CD$	given
$\angle 1 = \angle 4$	given
$\angle 4 = \angle 2$	Corresp. $\angle$s.
$\angle 1 = \angle 2$	transitive

14. Given $BC \parallel EF$

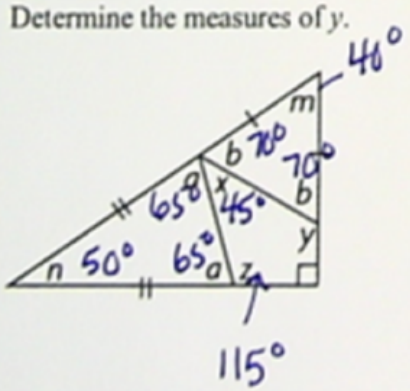
$\angle 1 = \angle 3$

Prove: $AB \parallel DE$



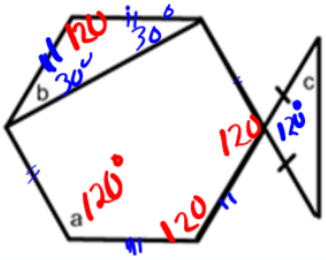
Statement	reason
$BC \parallel EF$	given
$\angle 1 = \angle 3$	given
$\angle 2 = \angle 3$	Corresp. $\angle$s
$\angle 1 = \angle 2$	transitive
$AB \parallel DE$	equal corr. $\angle$s

15. Given $\angle z = 115°$.
Determine the measures of y.



$a = 65°$
$n = 50°$
$m = 40°$
$b = 70°$
$x = 45°$
$y = 110°$

16.



Each $\angle$ $\frac{180(n-2)}{n}$

$\frac{180(6-2)}{6} = 120°$

$\angle a = 120°$
$\angle b = 30°$
$\angle c = 30°$