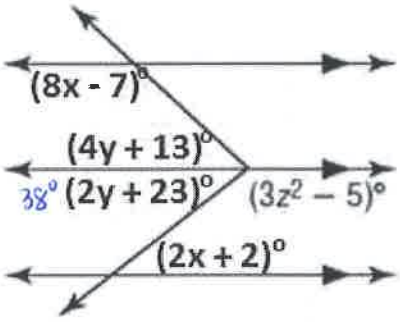
34. Please solve for x, y, and z.



$8x-7+4y+13=180$ $\quad 2y+23=2x+2$

$\rightarrow 8x+4y=174$ $\quad \rightarrow -2x+2y=-21$

$8x+4y=174$

$4(-2x+2y=-21) \Rightarrow -8x+8y=-84$

$12y=90$

$y=7.5$

$8x+4(7.5)=174$

$8x=144$

$x=18$

$38+3z^2-5=180$

$3z^2+33=180$

$3z^2=147$

$z^2=49$

$z=7$ or $z=-7$

Unit 3

35. In ΔABC, $m\angle A=(2x-5)°$, $m\angle B=(x-1)°$, and $m\angle C=(x+2)°$. Classify the triangle by its angles.

$2x-5+x-1+x+2=180$

$4x-4=180$

$4x=184$

$x=46$

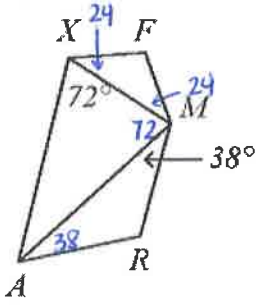
$m\angle A=87°$

$m\angle B=45°$

$m\angle C=48°$

acute Δ

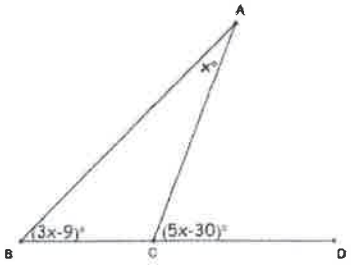
36. ΔARM, ΔMAX, and ΔXFM are all isosceles triangles. If $m\angle FXA=96°$, what is $m\angle FMR$?



$m\angle FMR=24+38+72$

$m\angle FMR=134°$

37. a. Find the $m\angle ACD$



$5x-30=x+3x-9$

$5x-30=4x-9$

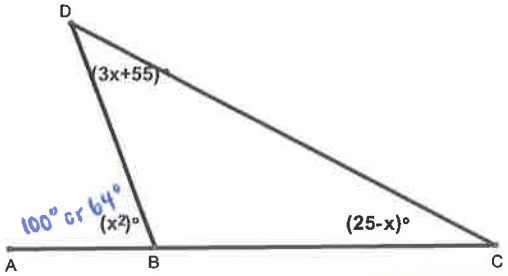
$x-30=-9$

$x=21$

$m\angle ACD=5(21)-30$

$m\angle ACD=75°$

b. Find all possible measures of $\angle DBC$.



$x^2=3x+55+25-x$

$x^2=2x+80$

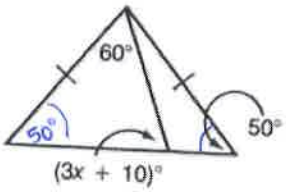
$x^2-2x-80=0$

$(x-10)(x+8)=0$

$x=10, x=-8$

$m\angle DBC=80°$ or $m\angle DBC=116°$

38. Find the value of x



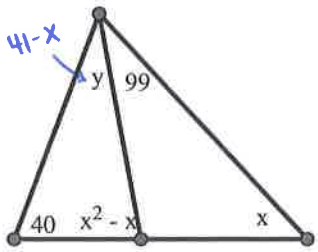
$60 + 50 + 3x + 10 = 180$

$3x + 120 = 180$

$3x = 60$

$\boxed{x = 20}$

39. Find the values of x and y.



$x + y + 139 = 180$

$\rightarrow x + y = 41$

$y = 41 - x$

$41 - x + 40 + x^2 - x = 180$

$x^2 - 2x + 81 = 180$

$x^2 - 2x - 99 = 0$

$(x - 11)(x + 9) = 0$

$\boxed{x = 11}$ ~~$x = -9$~~

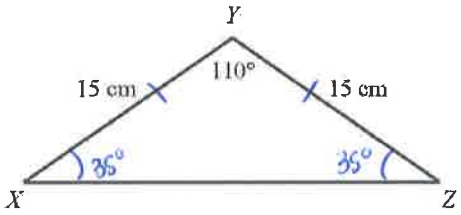
$y = 41 - 11$

$\boxed{y = 30}$

40. How are the interior angle of a triangle and its adjacent exterior angle related?

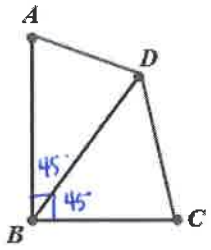
a. They are complementary angles
(b.) They are supplementary angles
c. They are congruent angles
d. They are vertical angles

41. Classify triangle XYZ according to its angle measures and side lengths.



Ⓕ acute, equilateral
Ⓖ acute, isosceles
Ⓗ obtuse, scalene
Ⓙ obtuse, isosceles

42. Given : $\overline{AB} \perp \overline{BC}$, $\overline{BD}$ bisects $\angle ABC$, $m\angle ABD = (x+5y)°$, $m\angle DBC = (2x+2y+3)°$.
Find the values of x and y.



→ $x+5y=45$ $\quad 2x+2y+3=45$

→ $2x+2y=42$

$x+5(6)=45$

$x+30=45$

$\boxed{x=15}$

$-2\{(x+5y=45)$

$2x+2y=42$ ⇒

$-2x-10y=-90$

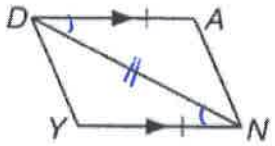
$2x+2y=42$

$-8y=-48$

$\boxed{y=6}$

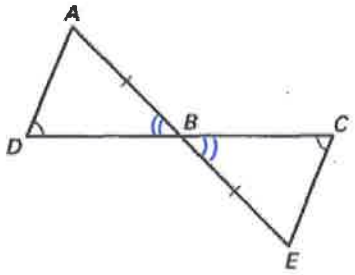
43. Given: $\overline{DA} \| \overline{YN}$; $\overline{DA} \cong \overline{YN}$

Prove: $\angle NDY \cong \angle DNA$



Statements	Reasons
1. $\overline{DA} \| \overline{YN}$	1. Given
2. $\angle ADN \cong \angle YND$	2. Alt. Int. Angles Thm
3. $\overline{DA} \cong \overline{YN}$	3. Given
4. $\overline{DN} \cong \overline{DN}$	4. Reflexive Prop
5. $\triangle ADN \cong \triangle YND$	5. SAS
6. $\angle NDY \cong \angle DNA$	6. CPCTC

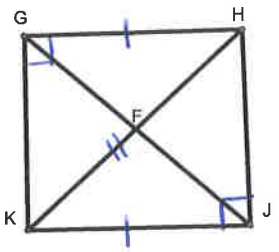
44. Use the given information to write a proof.
Prove : $\overline{DB} \cong \overline{CB}$



Statements	Reasons
1. $\angle D \cong \angle C$	1. Given
2. $\overline{AB} \cong \overline{EB}$	2. Given
3. $\angle ABD \cong \angle EBC$	3. VAT
4. $\triangle ABD \cong \triangle EBC$	4. AAS
5. $\overline{DB} \cong \overline{CB}$	5. CPCTC

45. Given: $\overline{GH} \cong \overline{KJ}$, $\overline{KG} \perp \overline{GH}$ and $\overline{KJ} \perp \overline{JH}$

Prove : $\Delta GHK \cong \Delta JKH$



Statements	Reasons
1. $\overline{GH} \cong \overline{KJ}$	1. Given
2. $\overline{KG} \perp \overline{GH}$	2. Given
3. $\overline{KJ} \perp \overline{JH}$	3. Given
4. $\overline{HK} \cong \overline{HK}$	4. Reflexive Prop
5. $\Delta GHK \cong \Delta JKH$	5. HL

46. Which of the following methods is NOT a method for proving triangle congruence?

a. SSS
b. SAS
c. AAS
d. SSA

47. Using the given information, please solve for the value of x and find the perimeter of the triangle.

$3x+4=5x-10$

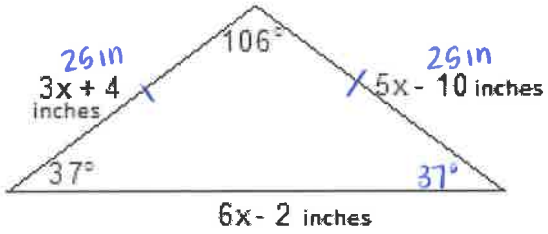
$4=2x-10$

$14=2x$

$x=7$

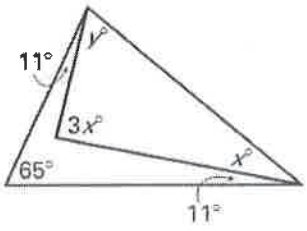
$P=25+25+40$

$P=90$ in



40 in

48. Please find the values of x and y.



$x+y+3x=180$

$\rightarrow 4x+y=180$

$11+y+x+11+65=180$

$\rightarrow x+y=93$

$4x+y=180$

$-1(x+y=93) \Rightarrow$ $4x+y=180$, $-x-y=-93$

$3x=87$

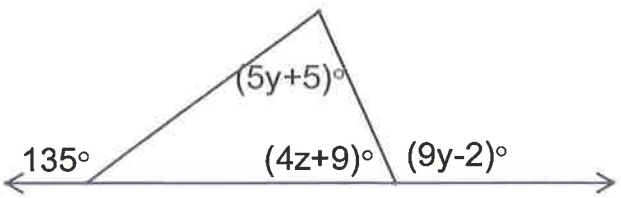
$x=29$

$4(29)+y=180$

$116+y=180$

$y=64$

49. Please find the values of y and z.



$135=5y+5+4z+9$

$\rightarrow 121=5y+4z$

$4z+9+9y-2=180$

$\rightarrow 9y+4z=173$

$-1\{(5y+4z=121) \Rightarrow -5y-4z=-121$, $9y+4z=173$

$4y=52 \Rightarrow y=13$

$9(13)+4z=173$

$4z=56$

$z=14$