

3.6 Part B Types of Triangles [Compatibility Mode] - Microsoft Word

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Ruler Gridlines Navigation Pane Show

Zoom 100% One Page Two Pages Page Width Zoom

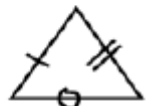
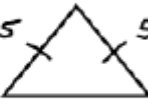
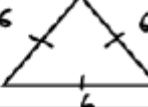
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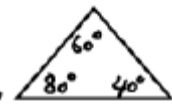
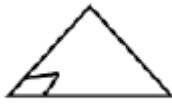
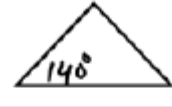
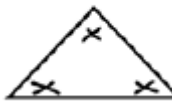
Types of Triangles

Classified by:

Sides

Angles

Triangle Name	Definition	Drawing
Scalene Triangle	No sides \cong	
Isosceles Triangle	At least 2 \cong sides	
Equilateral Triangle	All sides \cong	

Triangle Name	Definition	Drawing
Acute Triangle	All \angle s acute $0^\circ < \text{Acute} < 90^\circ$	
Right Triangle	One right \angle	
Obtuse Triangle	One obtuse \angle	
Equiangular Triangle	All $\cong \angle$ s $x = 60^\circ$	

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3.6. Honors Geometry

DATE: 11/15

Target 3C. Know and utilize sufficient conditions to prove triangles are congruent

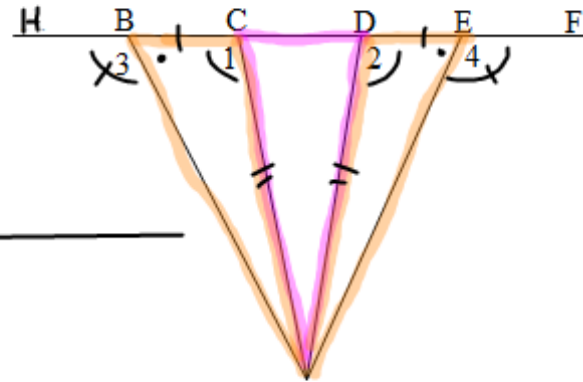
Target 3D. Prove congruent triangles using the Law of Syllogism

Write a two column proof.

Given: $\angle 1 \cong \angle 2$

$\angle 3 \cong \angle 4$

C and D trisect segment BE



Prove: $\triangle CDA$ is isosceles

Statement	Reason
① $\angle 1 \cong \angle 2$	① Given
② $\angle 3 \cong \angle 4$	② Given
③ C and D trisect \overline{BE}	③ Given
④ $\overline{BC} \cong \overline{ED}$	④ If 2 pts are trisection pts of a segment, then they \div the segment into 3 \cong segments (Def. of trisection)
⑤ $\angle HBC, \angle FED$ st. \angle s	⑤ Assume from diagram
⑥ $\angle HBC \cong \angle FED$	⑥ If two \angle s are st. \angle s, then they are \cong .
⑦ $\angle ABC \cong \angle AED$	⑦ Subtraction property of \angle s.
⑧ $\triangle ABC \cong \triangle AED$	⑧ ASA(7, 4, 1)
⑨ $\overline{CA} \cong \overline{DA}$	⑨ CPCTC
⑩ $\triangle CDA$ isosceles	⑩ If at least 2 sides of a $\triangle \cong$, then \triangle is isosceles

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Given: $\triangle DEF$ is equilateral

$$DF = x - 8$$

$$EF = \frac{1}{2}x$$

Find DF.

$$\begin{aligned} \text{So } DF &= x - 8 \\ &= 16 - 8 \end{aligned}$$

$$= 8 \checkmark$$

$$\Rightarrow \overline{DF} \cong \overline{DE} \cong \overline{FE}$$

$$\therefore \frac{1}{2}x = x - 8$$

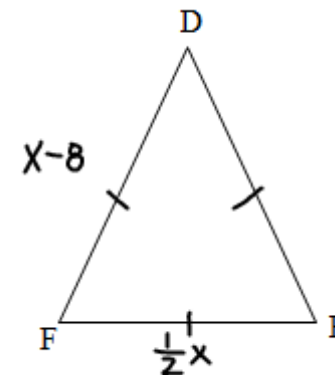
Mult every term
by 2 to get rid
of fraction!

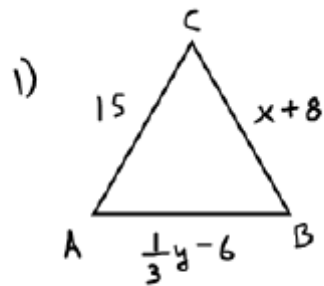
$$2 \cdot \frac{1}{2}x = 2 \cdot x - 2 \cdot 8$$

$$\begin{array}{r} 1x = 2x - 16 \\ -2x \quad -2x \\ \hline -1x = -16 \end{array}$$

$$x = 16$$

$$\frac{-1x}{-1} = \frac{-16}{-1}$$





$\triangle ABC$ is equilateral.

Find the value of x and y .

$\triangle ABC$ equi $\Rightarrow \overline{AC} \cong \overline{BC} = \overline{AB}$

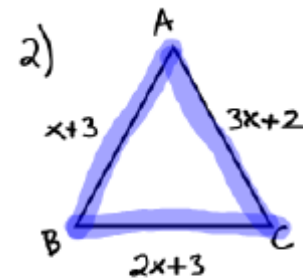
$$15 = x + 8$$

$$\boxed{7 = x}$$

$$15 = \frac{1}{3}y - 6$$

$$(3) \cdot 21 = \frac{1}{3}y \cdot (3)$$

$$\boxed{63 = y}$$



Perimeter
of $\triangle ABC = 20$

What type of \triangle is $\triangle ABC$?

$AC + BC + AB = 20$ From given

$$\underline{3x+2} + \underline{2x+3} + \underline{x+3} = 20$$

$$6x + 8 = 20$$

$$6x = 12$$

$$x = 2$$

\therefore Scalene \triangle

$$AB = (2) + 3 = 5, AC = 3(2) + 2 = 8, BC = 2(2) + 3 = 7$$