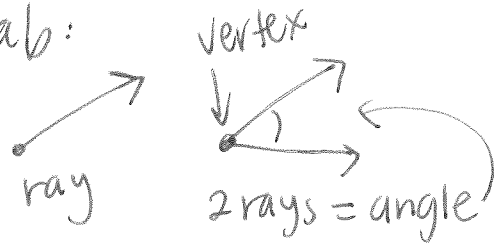
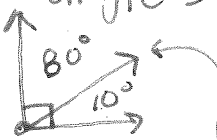
Lesson 13-1 "Complementary, Supplementary, & Adjacent Angles" p. 137

LT: Write equations involving ↑ (those)

Vocab:



Complementary angle = 90°



Supplementary angles = 180°

adjacent angle — share side / vertex

Qs

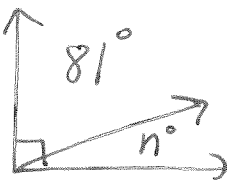
1) Complement

Step 1: Write equation to = 90°

2: Inverse operation

As

ex)



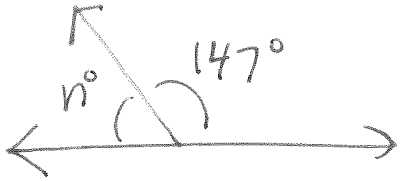
$81 + n = 90$

$-81 \quad -81$

$n = 9°$

2) Supplement same but = 180°

ex)



$n + 147 = 180$

$-147 \quad -147$

$n = 33°$

ex) ∠JKL & ∠RST are complementary. = 90°

$m\angle JKL = 36°$ & $m\angle RST = (x+15)°$

① What's x?

② What's $m\angle RST$.

$\underset{\angle JKL}{36} + \underset{\angle RST}{(x+15)} = \underset{=\text{comp.}}{90°}$

$36 + x + 15 = 90°$ ① ↓ combine like terms

$51 + x = 90°$ ② inverse op.

$-51 \quad -51$

$x = 39$

① $x = 39$

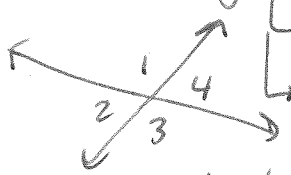
② $m\angle RST = (x+15)°$

$39 + 15 = 54°$

L13-2 "Vertical Angles & Angle Relationships in Triangle" P. 142

LT: Sum of ∠s in △.

Vocab: Vertical Angles → =



↳ 2 lines intersect
↳ share vertex
no common rays

∠1 & ∠3 and ∠2 & ∠4

conjecture
↳ statement seems true
↳ not proven T/F

Protractor → tool used to measure ∠s

Triangle → 3 line segments meet at endpoints
△
↳ sum of ∠s = 180°

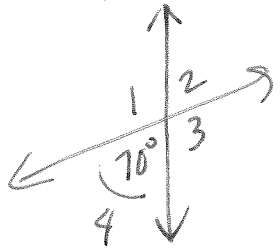
Qs

① Vertical ∠s
∠1 & ∠3
∠2 & ∠4

② Find missing ∠s
∠1 & 2 = 180° straight ∠
∠4 & 3

As

ex)



ex) m∠3 = ?

$\angle 4 + \angle 3 = 180°$

$70 + n = 180$

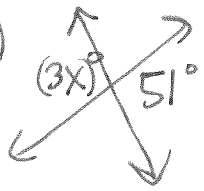
$-70 \quad -70$

$n = 110°$ ← m∠3

ex) m∠2 = ?
∠4 & ∠2 are vertical & =
so since ∠4 is 70°
∠2 = 70° too!

ex) since m∠3 = 110°
m∠1 = 110°

L13-2 pg. 2

ex) 

↓ They're = since they're vertical

$(3x)° = 51°$

$\frac{3x}{3} = \frac{51}{3}$

$x = 17$

Find x?

Isolate variable

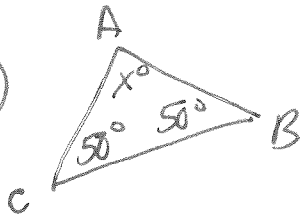
$3\overline{)51}$ → 17

$-3\downarrow$

21

③ Triangles

↳ sum of all 3 △s $= 180°$

ex) 

find $x° =$ ☐

$50 + 50 + x = 180°$

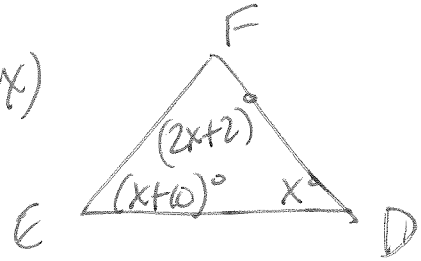
$100 + x = 180°$

$-100 \quad -100$

$x = 80°$

Step 1: add all to $= 180°$

2: solve for x

ex) 

Find x?

measure of each △? $m\angle D = ?$ $m\angle E = ?$ $m\angle F = ?$

$(2x+2)° + (x+10)° + x° = 180°$

F E D

$2x + 2 + x + 10 + x = 180°$

combine like terms →

$2x + x + x + 2 + 10 = 180°$

$4x + 12 = 180°$

$-12 \quad -12$

$\frac{4x}{4} = \frac{168}{4}$

$x = 42$

$4\overline{)168}$ → 42

$-16\downarrow$

08

→ now plug in to find rest.

$m\angle F =$

$(2x+2)$

$2(42) + 2$

$84 + 2 = \boxed{86°}$

$m\angle E =$

$(x+10)°$

$42 + 10 = \boxed{52°}$

combine like terms →

$m\angle D = 42°$

$m\angle E = 52°$

$m\angle F = 86°$

L14-1 Draw Triangle from Side Lengths p. 147

LT: Decide if 3 sides lengths determine a △.
Draw △ w/ given sides

Vocab: Unique △
↳ only one way to draw that △

Do pg. 147
#16 1st Qs

① Does it make a △?
↳ sum of 2 shorter sides + have to be > than longest side.

Step 1: Circle largest side
2: add other 2 to compare

Ex) 7ff, 5, 2 = △?

5 + 2 > 7
✓
7 > 7 = NO!

Ex) 3, 4, (6)

3 + 4 > 6
✓
7 > 6 ! Yes