Assignment - Angle Properties.pdf

Solutions...

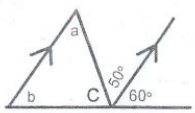
Section 7 In class Assignment.notebook

Chapter 7
In class Assignment

Name : Key

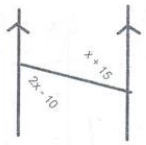
1) For each unknown angle, identify the measurement of the angle AND the property you used to solve it:

a)



Answers:
c= 70 (SAT)
a= 50 (AIA)
b= 60 (SATT)

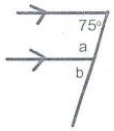
b)



Answers: (AIA)
x= 25
2x -10 = 40
x + 15 = 40

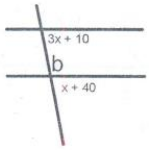
2x - 10 = x + 15
x = 25

c)



Answers:
a = 105° (CIA)
b = 75° (CA)

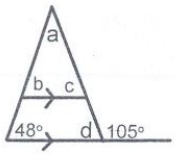
d)



3x + 10 = x + 40
2x = 30
x = 15

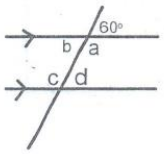
Answers: (CA)
x= 15
3x + 10 = 55
x + 40 = 55
b= 125 (CIA)

e)



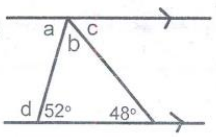
Answers:
d= 75° (SAT)
c= 75° (CA)
b= 48° (CA)
a= 57° (SATT)

f)



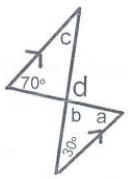
Answers:
a = 120° (SAT)
b = 60° (OAT)
c = 120° (AIA)
d = 60° (CA)

g)



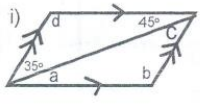
Answers:
a = 52° (AIA)
b = 80° (SATT)
c = 48° (AIA)
d = 128° (SAT)

h)



Answers:
a = 70° (AIA)
b = 80° (SATT)
c = 30° (AIA)
d = 100° (SAT)

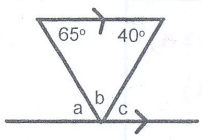
i)



Answers:
a = 45° (AIA)
b = 100° (SATT)
c = 35° (AIA)
d = 100° (SATT)

1

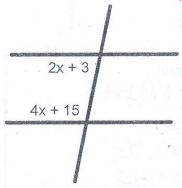
j)



Answers:
a = 65° (AIA)
b = 75° (SATT)
c = 40° (AIA)

k)

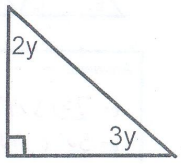
$2x+3+4x+15=180$
$6x+18=180$
$6x=162$
$x=27$



Answers: (CIA)
x = 27°
2x + 3 = 57°
4x + 15 = 123°

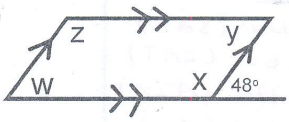
l)

$2y+3y=90$
$5y=90$
$y=18$



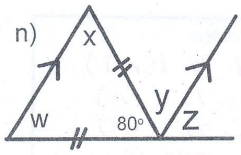
Answers: (CAT)
y = 18°
2y = 36°
3y = 54°

m)



Answers:
x = 132° (SAT)
y = 48° (CIA)
w = 48° (CA)
z = 132° (CIA)

n)

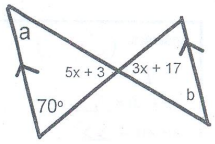


Answers:
w = 50° (ITT)
x = 50° (ITT)
y = 50° (AIA)
z = 50° (CA)

$\frac{180-80}{2}$

o)

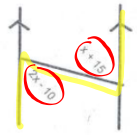
$5x+3=3x+17$
$2x=14$
$x=7$



Answers:
x = 7° (OAT)
5x + 3 = 38°
3x + 17 = 38°
a = 72° (SATT)
b = 72° (SATT)

Questions from Assignment...

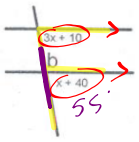
b)



$2x - 10 = x + 15$
$2x - x = 15 + 10$
$x = 25$

Answers: (AIA)
x= 25
2x -10 = 40
x + 15 = 40

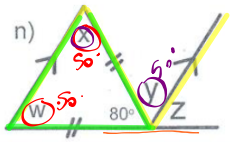
d)



$3x + 10 = x + 40$
$3x - x = 40 - 10$
$\frac{2x}{2} = \frac{30}{2}$
$x = 15$

Answers: (CA)
x= 15
3x + 10 = 55
x + 40 = 55
b= 125 (SAT)

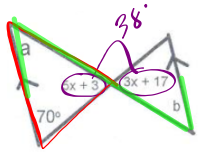
n)



$\frac{180 - 80}{2}$
50

Answers:
Saving ink nc
X = 50 } ITT & SATT
W = 50
Y = 50 AIA
Z = 50 SAT

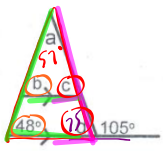
o)



$5x + 3 = 3x + 17$
$5x - 3x = 17 - 3$
$\frac{2x}{2} = \frac{14}{2}$
$x = 7$

Answers:
x= 7 (OAT)
5x+3 = 38
3x+17 = 38
a= 72 (SATT
b= 72 (AIA

e)



Answers:
d = 75 (SAT)
a = 57 (SATT)

b = 48 (CA)
c = 75 (CA)

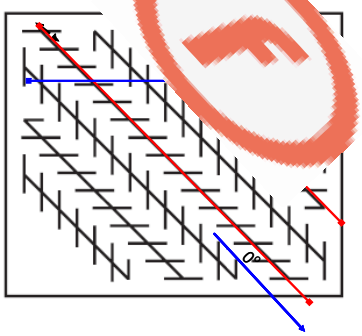
Homework QUESTIONS???

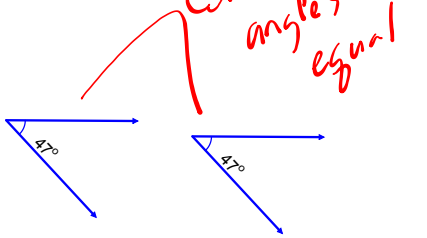
p. 72: #4-6

p. 78: #2, 8, 10, 12, 20

p. 72

6. Nancy claims that the diagonal lines in the diagram to the left are not parallel. Do you agree or disagree? Justify your decision.





Corresponding angles are equal

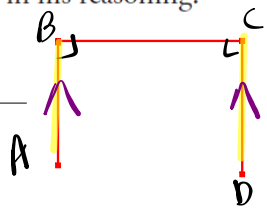
8. a) Joshua made the following conjecture: "If $AB \perp BC$ and $BC \perp CD$, then $AB \perp CD$." Identify the error in his reasoning.

perpendicular

Joshua's Proof

Statement	Justification
$AB \perp BC$	Given
$BC \perp CD$	Given
~~$AB \perp CD$~~ $AB \parallel CD$	~~Transitive property~~ CA

error



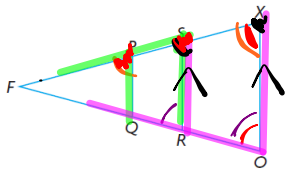
b) Make a correct conjecture about perpendicular lines.

12. Given: $\triangle FOX$ is isosceles.

$\angle FOX = \angle FRS$

$\angle FXO = \angle FPQ$

Prove: a) $PQ \parallel SR$ and b) $SR \parallel XO$



b)

Statement	Justification
$\angle FRS = \angle FOX$	Given
$\therefore SR \parallel XO$	CA

a)

S	J
$\angle FSR = \angle FXO$	CA
$\angle FPQ = \angle FXO$	Given
$\angle FSR = \angle FPQ$	Transitive
$\therefore PQ \parallel SR$	CA

2.3 Angle Properties in Triangles

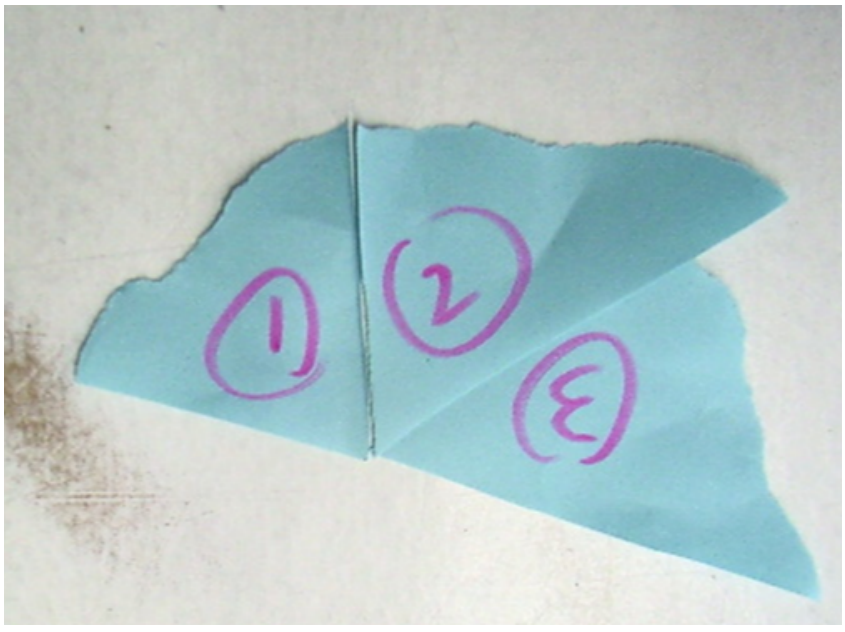
GOAL

Prove properties of angles in triangles, and use these properties to solve problems.

Construct a triangle with paper...

- tear off the angles and line them up!

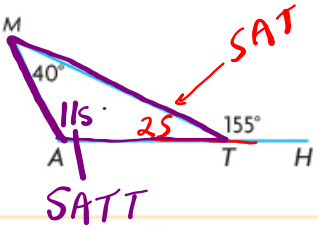
CONJECTURE



APPLY the Math

EXAMPLE 1 Using angle sums to determine angle measures

In the diagram, $\angle MTH$ is an **exterior angle** of $\triangle MAT$. Determine the measures of the unknown angles in $\triangle MAT$.



Serge's Solution

$\angle MTA + \angle MTH = 180°$
$\angle MTA + (155°) = 180°$
$\angle MTA = 25°$

$\angle MTA$ and $\angle MTH$ are supplementary since they form a straight line.

$\angle MAT + \angle AMT + \angle MTA = 180°$
$\angle MAT + (40°) + (25°) = 180°$
$\angle MAT = 115°$

The sum of the measures of the interior angles of any triangle is 180°.

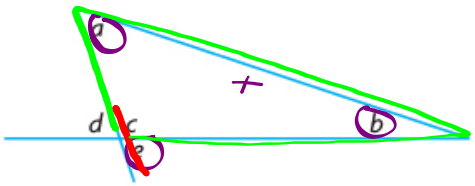
The measures of the unknown angles are:
$\angle MTA = 25°$; $\angle MAT = 115°$.

XEAT
Exterior Angle Theorem

$\angle e = \angle a + \angle b$

Your Turn

Prove: $\angle e = \angle a + \angle b$



Answer

S	J
$\angle e + \angle c = 180°$	SAT
$\angle a + \angle b + \angle c = 180°$	SAT
$\angle e + \angle c = \angle a + \angle b + \angle c$	Transitive
$\angle e = \angle a + \angle b$	☺

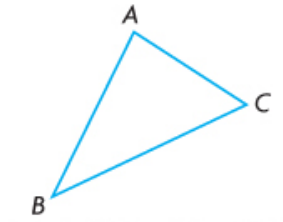
In Summary

Key Idea

- You can prove properties of angles in triangles using other properties that have already been proven.

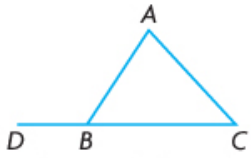
Need to Know

- In any triangle, the sum of the measures of the interior angles is proven to be 180°.



$\angle A + \angle B + \angle C = 180°$

- The measure of any exterior angle of a triangle is proven to be equal to the sum of the measures of the two non-adjacent interior angles.



$\angle DBA = \angle BAC + \angle ACB$

HW... Section 2.3: #1 - 13

p. 86

Attachments

2s3e2 finalt.mp4

A. Hallihan (MVHS) Grant Application.pdf

Assignment - Angle Properties.pdf