# Curriculum Outcomes:

(SS1) Solve problems and justify the solution strategy using circle properties, including: the perpendicular from the centre of a circle to a chord bisects the chord; the measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc; the inscribed angles subtended by the same arc are congruent; a tangent to a circle is perpendicular to the radius at the point of tangency.

Student Friendly:
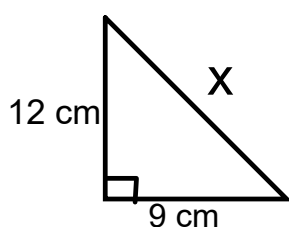Review of angle properties from grade 8 first!!!

Review
Pythagorean Theorem

$$hypotenuse$$

$$a \qquad c$$

$$b$$
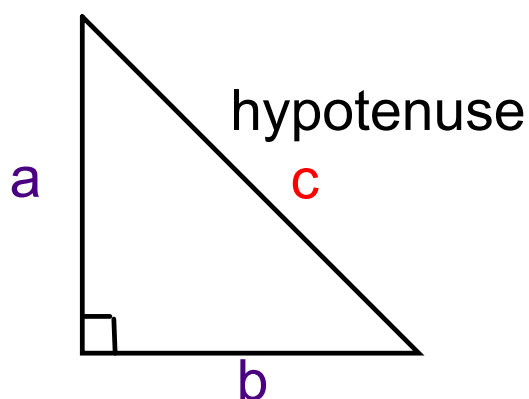
Hypotenuse $c^2 = a^2 + b^2$

Leg $a^2 = c^2 - b^2$

1)

12 cm   x

9 cm

2)
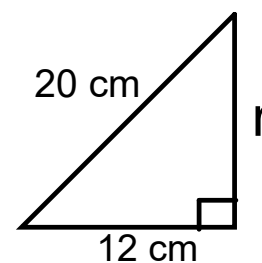
20 cm   r

12 cm

X $\Rightarrow$ Hyp

$c^2 = a^{2+} b^2$

$c^2 = 12^2 + 9^2$

$c^2 = 144 + 81$

$c^2 = 225$

$c = \sqrt{225}$

$c = 15$ cm

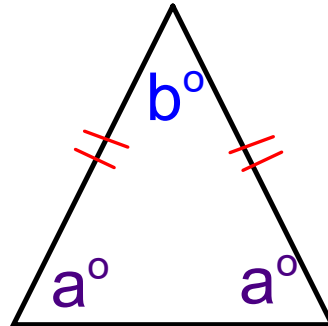r $\Rightarrow$ leg

$a^2 = c^2 - b^2$

$a^2 = 20^2 - 12^2$

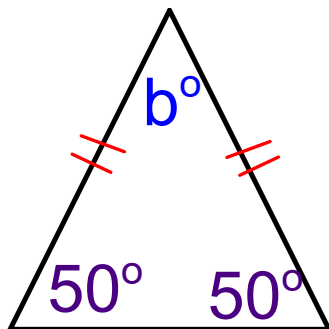$a^2 = 400 - 144$

$a^2 = 256$

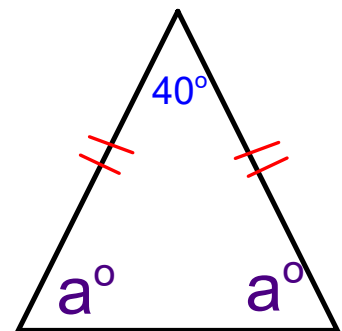$a = \sqrt{256}$

$a = 16$ cm

Isosceles Triangle Theorem (ITT)

b^o

a^o a^o

-Base angles in an isosceles triangles are equal

$$b = 180^o - a^o - a^o$$

$$a^o = \frac{180^o - b^o}{2}$$

b^o

50° 50°

40°

a^o a^o

<b = 80° (ITT)

<a = 70° (ITT)

Review

Sum of Angles in a Triangle Theorem (SATT)

$a°$

$b°$ $c°$
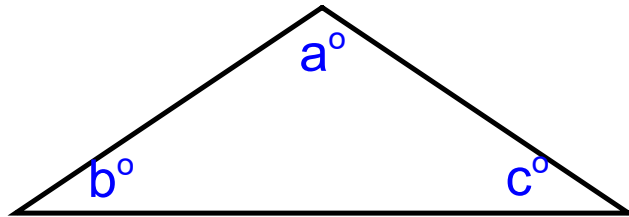
Rule:

Angles in a triangle add up to 180°

$$a° + b° + c° = 180°$$

1)

60°

$a°$
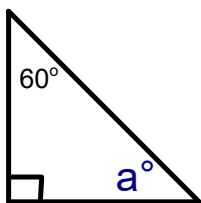
$a° = 180° - 90° + 60°$

$a° = 30°$ (SATT)

2)

$b°$

24°
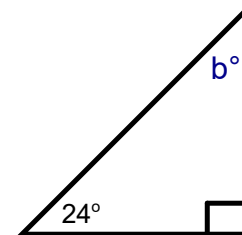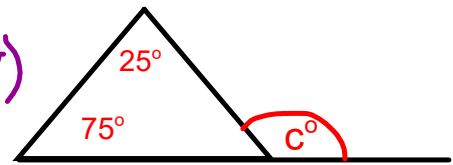
$b° = 180° - 90° - 24°$

$b° = 66°$ (SATT)

Exterior Angle Theorem **(EAT)**

-Exterior angle of a triangle is equal to the sum of the opposite interior angles.

$$c^\circ = a^\circ + b^\circ$$

b°
a°
c°

$<C = 100^\circ \ (EAT)$

25°
75°
c°
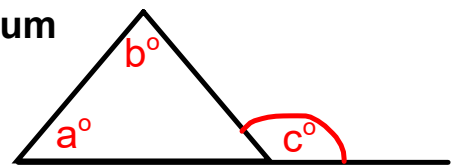
Quadrilateral Angle Theorem **(QuadT)**

-Angles in a quadrilateral add up to 360°

$$a^\circ + b^\circ + c^\circ + d^\circ = \ = 360^\circ$$

b°
c°
a°
d°

Supplementary Angle Theorem (SAT)

-Angles on a straight line add up to 180°

$a° + b° = 180°$

$120°$
$a°$ $b°$

$\angle b = 60° \ (SAT)$
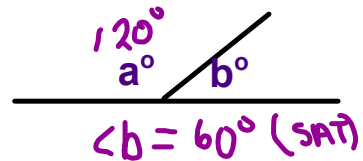
Complementary Angle Theorem (CAT)

-Angles add up to 90°

$$a° + b° = 90°$$

$50°$
$a°$
$b°$

$\angle b = 40° \ (CAT)$
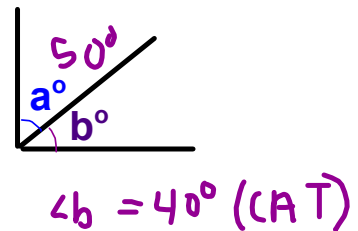
Cyclic Angle theorem (CyAT)

-Angles in a circle add up to 360°

$$a° + b° + c° + d° = = 360°$$

$a°$
$d°$ $b°$
$c°$
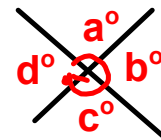
Opposite Angle theorem (OAT)

-Opposite angles are equal

$b°$
$a°$ $a°$
$b°$
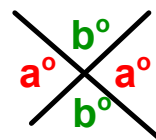
Naming an Angle Properly
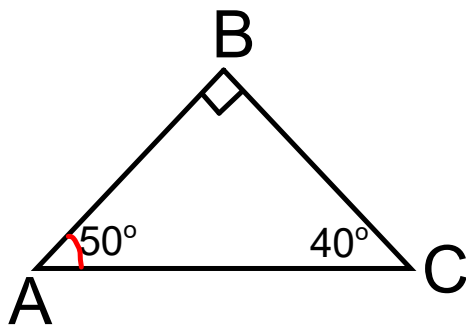
We use three letters
to name an angle

<A= < $\underline{\overset{C \; A \; B}{B \; A \; C}}$ = 50°

<B= < $\underset{c \; B \; A}{\underline{A \; B \; C}}$ = 90°

<C= < $\underset{B \; C \; A}{\underline{A \; C \; B}}$ = 40°

a /35°

D
62°
C
b
B

d
c   e

28°
f   g

h
55° i
j

55°
k   l   77°

a /35°

a = 145° (SAT)

D
62°
C ⌐
b
B

b<DBC= 28° (SATT)

d
c   e

c=d=e= 60 (SATT)

28°
f   g

f= g= 76° (ITT)

h
55° i
j
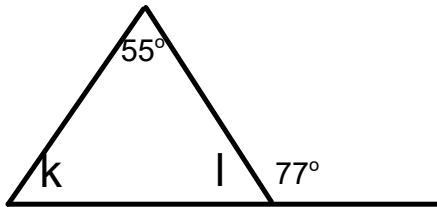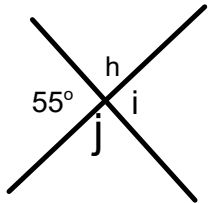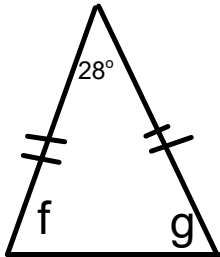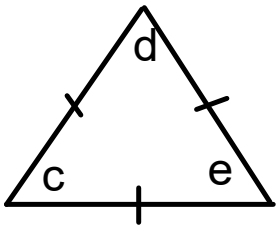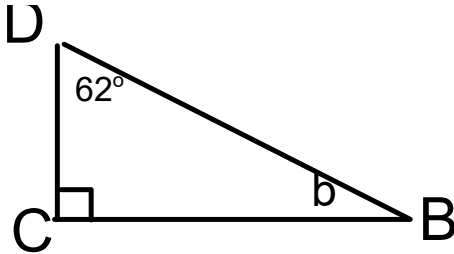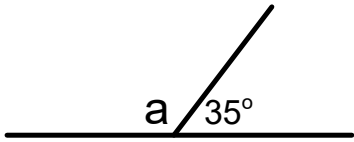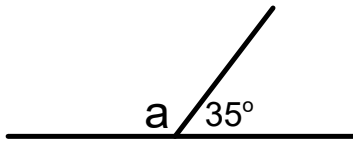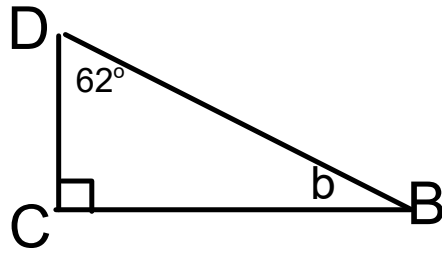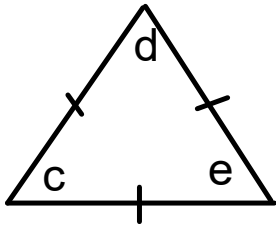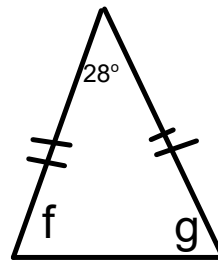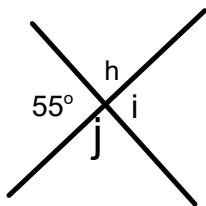
i= 55° (OAT)
h= 125° (SAT)
j= 125° (OAT)

55°
k   l 77°
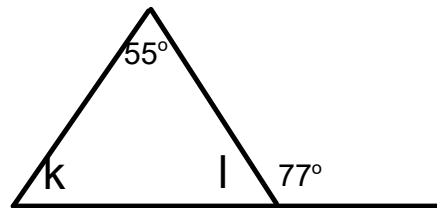
l= 103° (SAT)
k= 22° (SATT or EAT)

Class/Homework

Homework

-click on the "Homework" link on my teachers page for optional review questions

- If you have any questions you can contact me on the

Remind app

or

through email:

 melanie.burns@nbed.nb.ca

Attachments

Section 8.1 Sticky Note Activity.docx