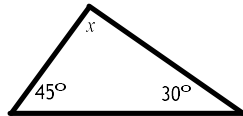## 1.0 - Review of Angle Properties

Get Ready...

A. Sum of Angles in a Triangle:
   All 3 angles in a triangle add to _180°_ .

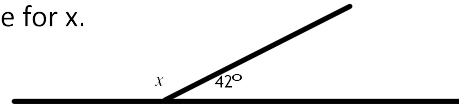Ex.1 Solve for x.

$180° = 45° + 30° + x$
$180 - 45 - 30 = x$
$105 = x$

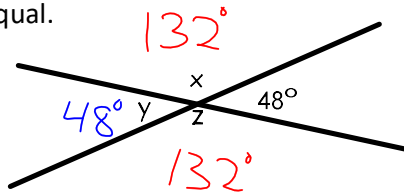**B. Supplementary angles** always add to _180_ .

Ex.2 Solve for x.

$x + 42° = 180°$
$x = 180 - 42$
$= 138$

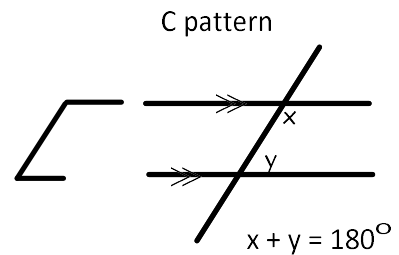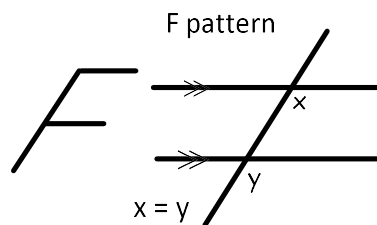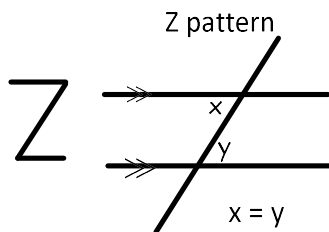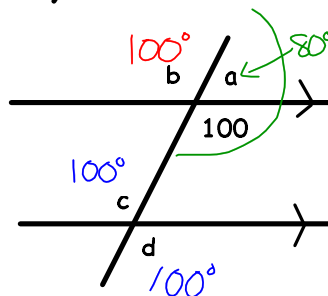**C. Opposite angles** are always equal.
   Ex.3 Solve for x, y and z.

132°
48° y
x z
48°
132°

D. Parallel Lines

Z pattern
x
y
x = y

F pattern
x
y
x = y

C pattern
x
y
x + y = 180°

Ex. 4 Find the value of the unknowns.
   Can you find another method to
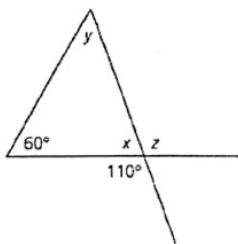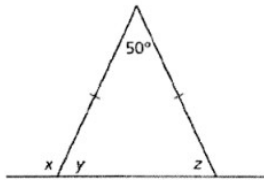   find each angle?

100°
b a 80°
100
100°
c
d
100°

1.

Determine the values of *x*, *y*, and *z* in each diagram.

(a)
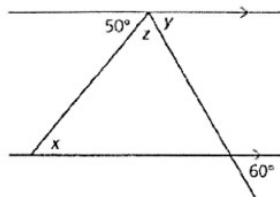

(b)

(h)
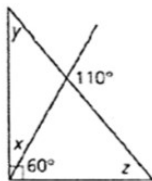
(c)
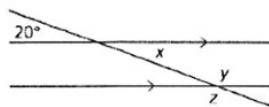
(d)

(g)
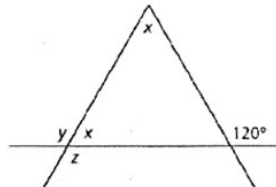
(e)
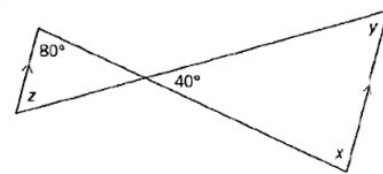
(f)
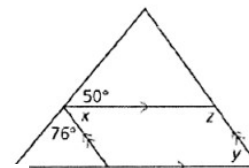
Answers:

a)   x = 70, y = 50, z = 110
b)   x = 115, y = 65, z = 65
c)   x = 20, y = 160, z = 160
d)   x = 50, y = 60, z = 70
e)   x = 80, y = 60, z = 60
f)   .x = 54, y = 54, z = 126
g)   x = 60, y = 120, z = 120
h)   x = 30, y = 40, z = 50

1. Find the measure of the unknown angle.

a)

b)

c)

d)

e)

f)

g)

h)

i)

j)
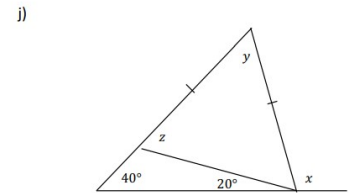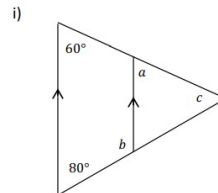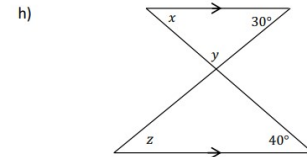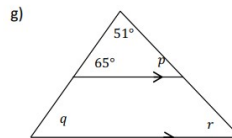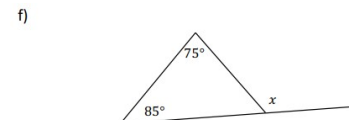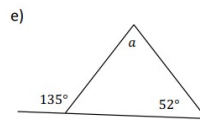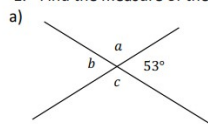
Answers:

1. a) a-127° (sup) b-53° (opp) c-127° (opp)
   b) a-47° (opp) b-71°(opp) c-62° (opp) d-71° (sup)
   c) a-75° (Z) b-105° (C)
   d) x–70° (sup) y–110° (F) z-110° (opp)
   e) a-83° (SATT)
   f) x-160° (sup)
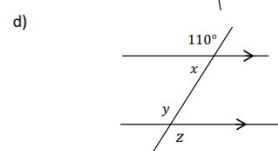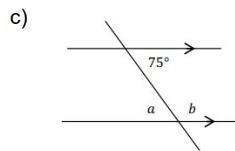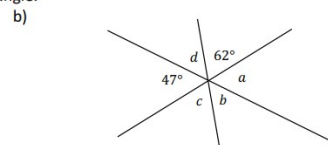
   g) p-64° (SATT), q-65° (F), r-64° (F)
   h) x-40° (Z) y-110° (SATT) z-30° (Z)
   i) a-60° (F) b-100° (C) c-40° (SATT)
   j) x-100° (sup) y-60° (SATT) z-60° (sup)

1.   Solve.

(a) $\dfrac{2}{5} = \dfrac{x}{20}$ (b) $\dfrac{4}{7} = \dfrac{36}{x}$

(c) $\dfrac{9}{12} = \dfrac{24}{x}$ (d) $\dfrac{25}{x} = \dfrac{5}{2}$

(e) $\dfrac{9}{x} = \dfrac{15}{20}$ (f) $\dfrac{x}{15} = \dfrac{64}{24}$

(g) $\dfrac{20}{65} = \dfrac{16}{x}$ (h) $\dfrac{x}{7} = \dfrac{6}{21}$

Answers:

1.   a) x = 8   b) x = 63   c) x = 32   d) x = 10
     e) x = 12   f) x = 40   g) x = 52   h) x = 2