U13 TOPIC 3: Angle Relationships with Algebra
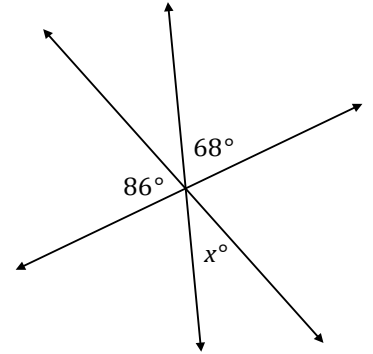
AIM: How can we use algebraic equations to solve geometry problems?
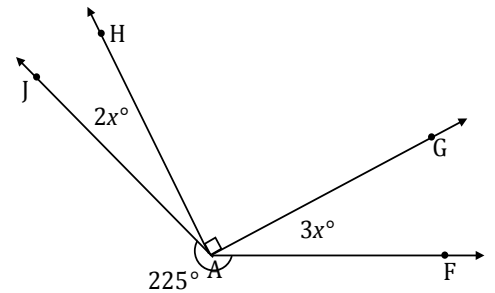
Note: m<ABC → "measure of angle ABC"

Example 1: The following figure shows three lines intersecting at a point.

a)   Identify the angle relationships in the diagram.

b)   Write an equation for the angle relationship shown in the figure and solve for **x**.

$68°$

$86°$

$x°$

Example 2:

a)   Write an equation for the angle relationship shown in the figure and solve for **x**.

H

J

$2x°$

G

$3x°$

$225°$ A

F

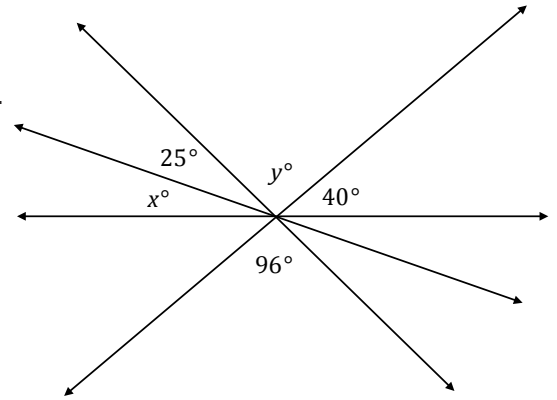b)   Find the measures of <JAH and <GAF.

On Your Own!

1)   The following figure shows four lines intersecting at a point.

a)   Describe the angle relationships in the diagram that can be used to find y°.
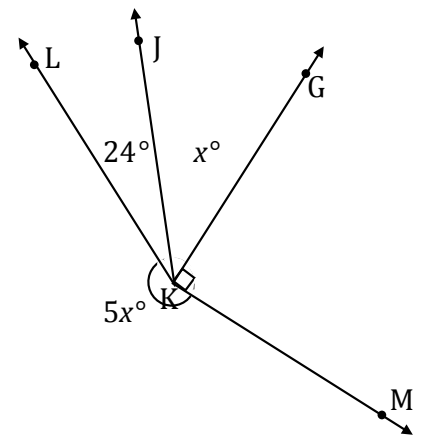
25°   y°
x°   40°
96°

b)   Find y°.

c)   Describe the angle relationships in the diagram that can be used to find x°.

d)   Find x°.

2a) Describe the angle relationships in the diagram that can be used to find x°.

L   J
G
24°   x°

b)   Write an equation for the angle relationship shown in the figure and solve for **x**.

5x°   K
M

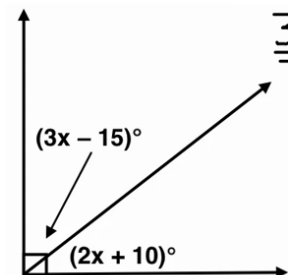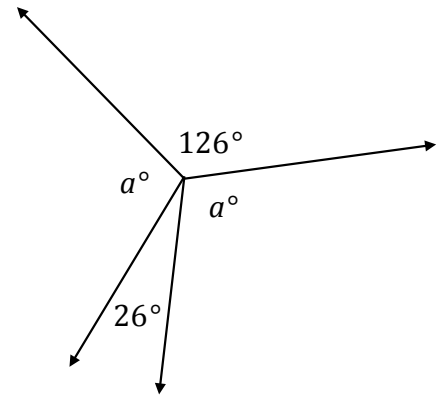3a)   Describe the angle relationship in the diagram that can be used to find x.

b)   Write an equation for the angle relationship shown in the figure and solve for **x**.

(3x – 15)°

(2x + 10)°

.

4a)   Identify the angle relationship that can be used to find *a*.

126°

$a°$

$a°$

26°

b)   Write and solve an equation to find *a*°.

5a)   The measure of <SPT = **b**°. The measure of <TPR is five more than two times <SPT. The measure of <QPS is twelve less than eight times <SPT.

a)   Write and solve an equation to find b^0.

S

T

$b°$

$(8b-12)°$ $(2b+5)°$

Q   P   R
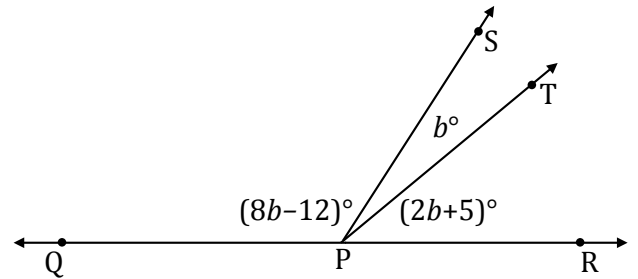
b)   Find the measure of <QPS.

c)   Find the measure of <TPR.