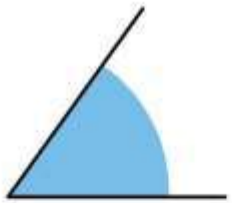
GEOMETRY OF STRAIGHT LINES

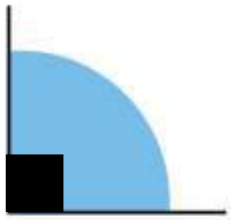
Topic 10

VIDEO 1

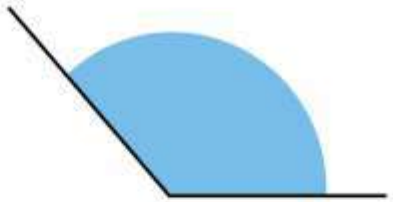
Remember your ANGLES



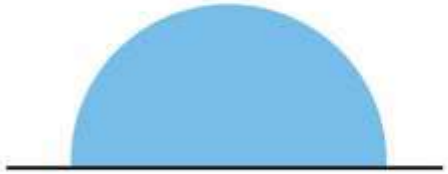
ACUTE ANGLE
Less than 90 Degree



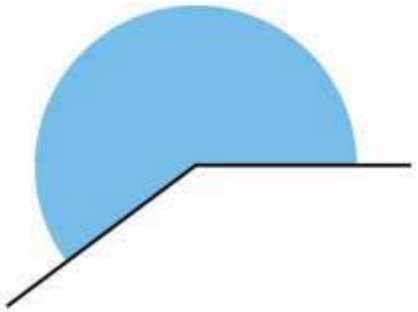
RIGHT ANGLE
Exact 90degree



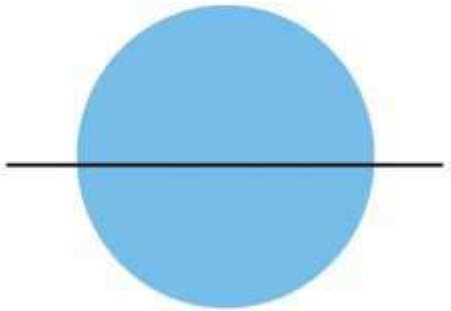
OBTUSE ANGLE
Greater than 90 degree and less than 180 degree



STRAIGHT ANGLE
Exact 180 Degree

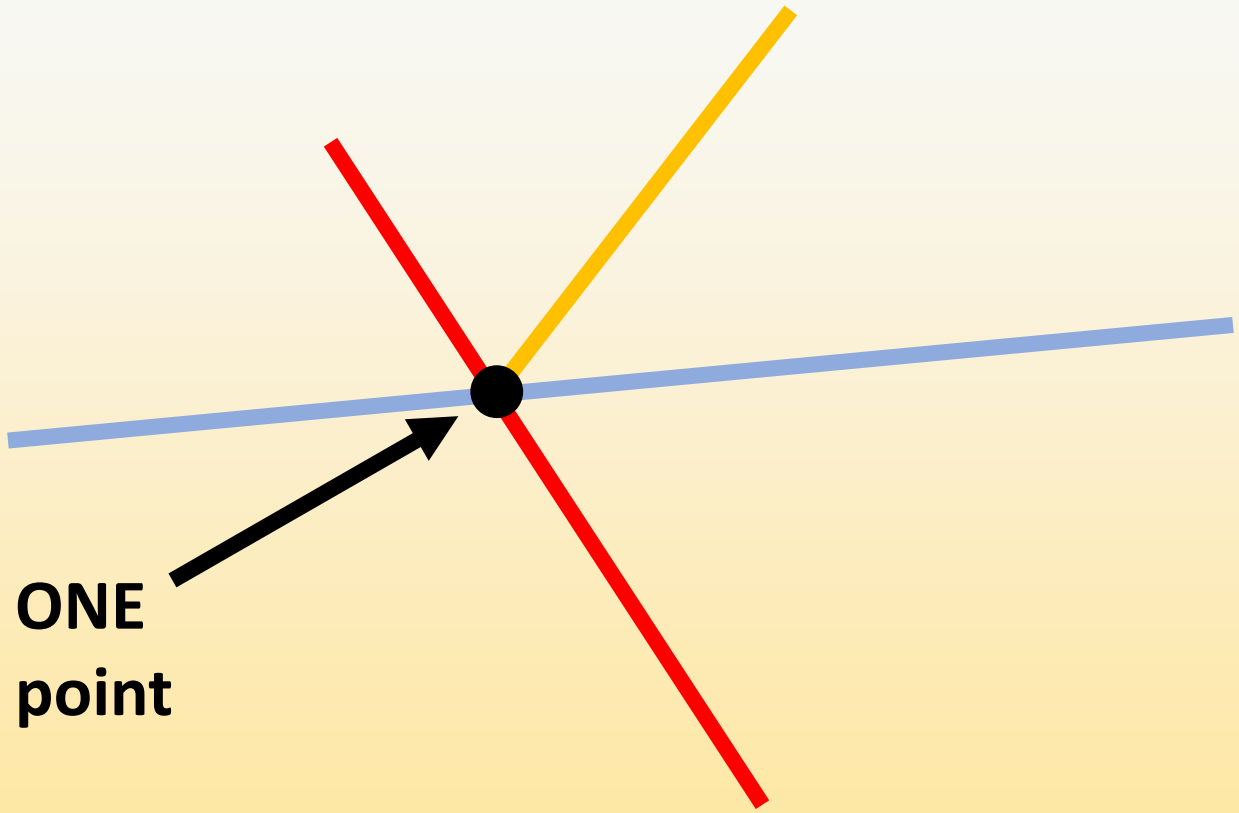


REFLEX ANGLE
Greater than 180 Degree

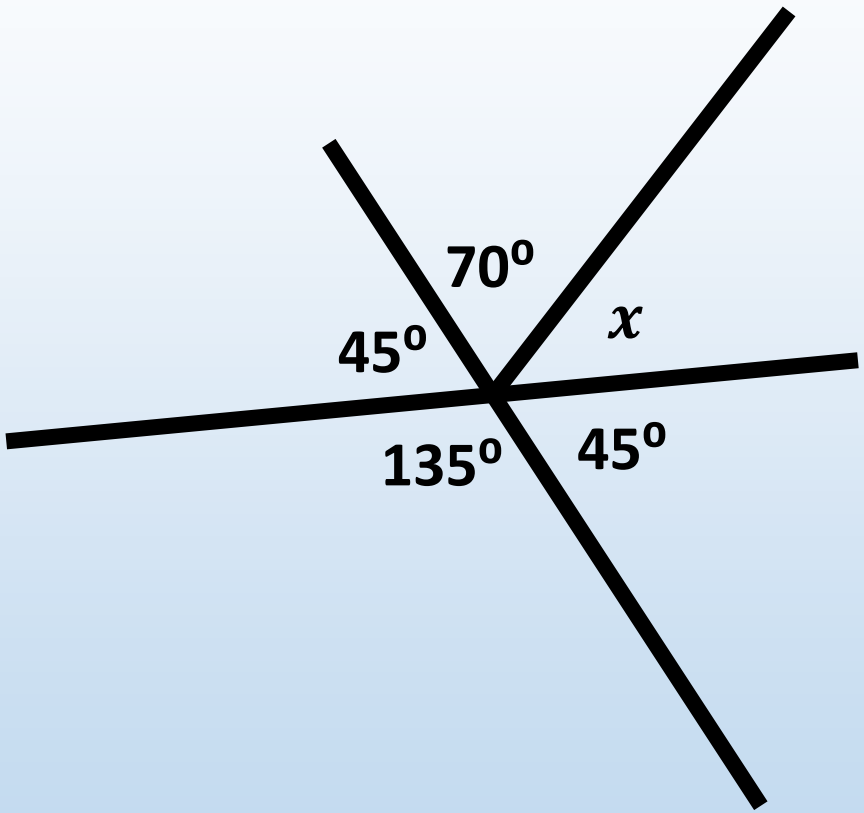


FULL ROTATION
Exact 360 Degree

Angles at ONE point

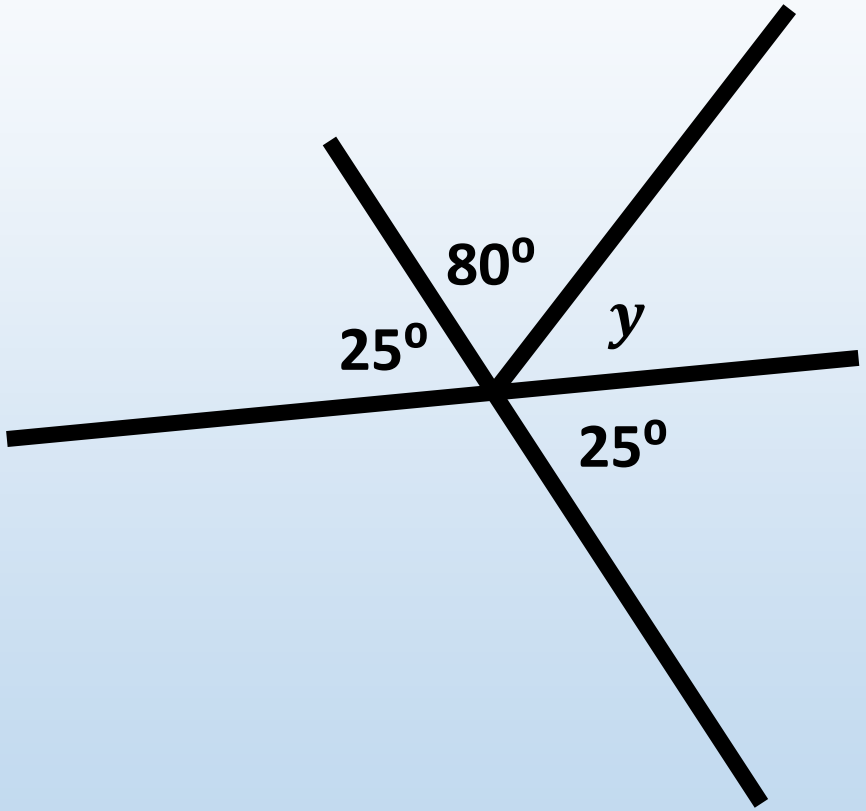


$\measuredangle s\ round\ a\ pt$



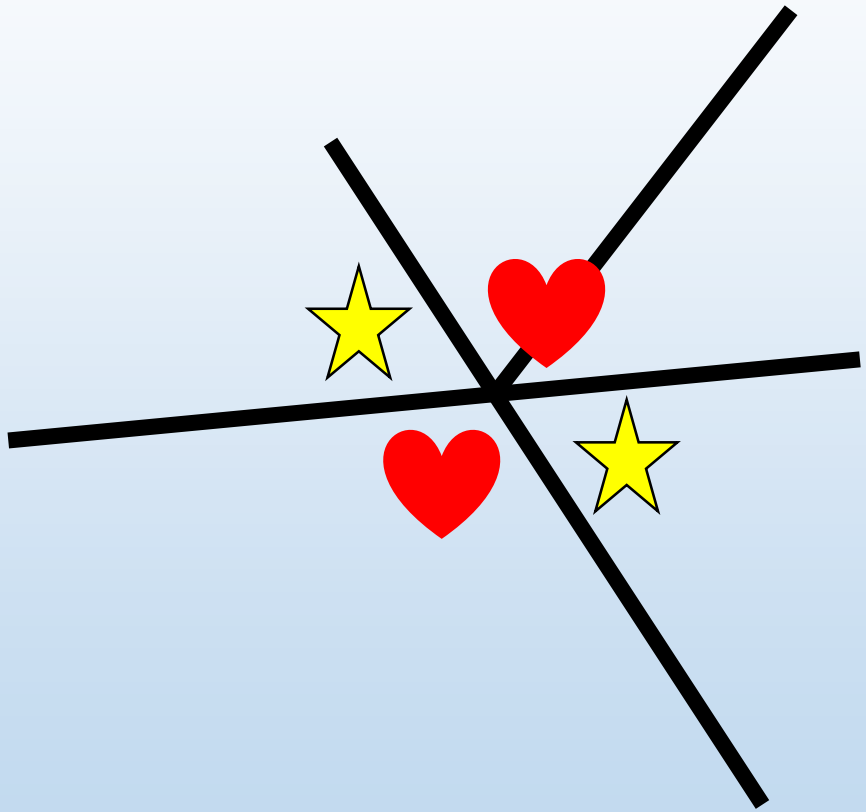
Statement	Reason
$\mathbf{70^0 + 45^0 + 135^0 + 45^0 + x = 360}$	$\measuredangle s\ round\ a\ pt$
$\mathbf{295^0 + x = 360^0}$	
$\mathbf{x = 360^0 - 295^0}$	
$\mathbf{x = 65^0}$	

$\measuredangle s$ *on a str line*

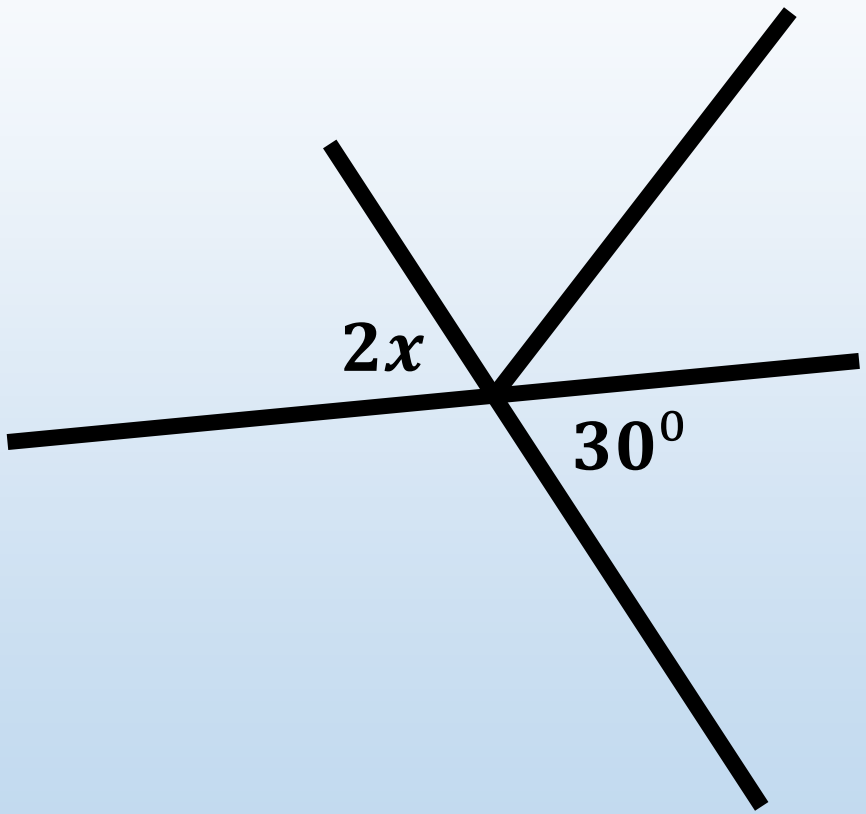


Statement	Reason
$80^0 + y + 25 = 180^0$	$\measuredangle s$ *on a str line*
$105^0 + y = 180^0$	
$y = 180^0 - 105^0$	
$y = 75^0$	

$Vert\ opp\ \measuredangle s =$



$Vert\ opp\ \measuredangle s =$



Statement	Reason
$2x = 30^0$	Vert opp $\measuredangle s =$
$\frac{2x}{2} = \frac{30^0}{2}$	
$x = 15^0$	

GEOMETRY OF STRAIGHT LINES

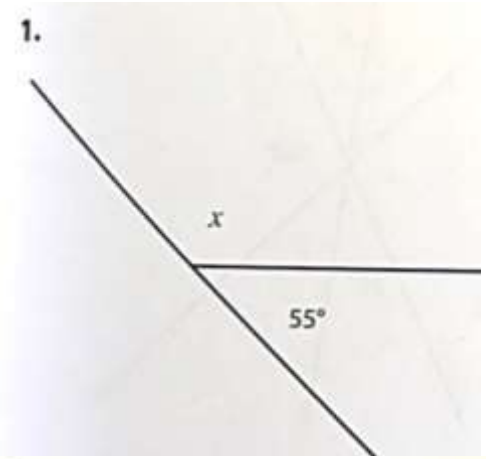
Topic 10

Ex 10.1 Pg. 87

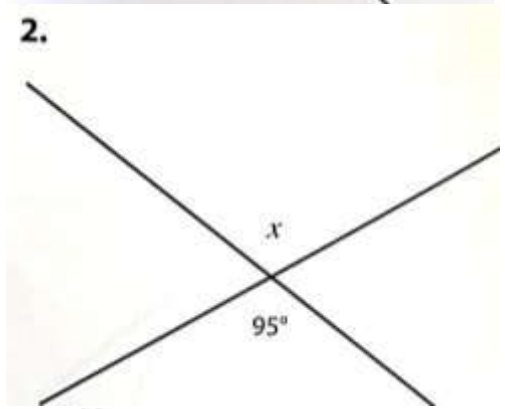
EXERCISE 10.1 Pg. 87

Calculate the unknown angles in each of the following, giving reasons for all your statements

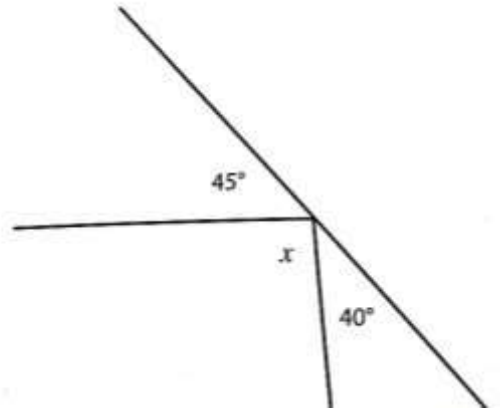
1.



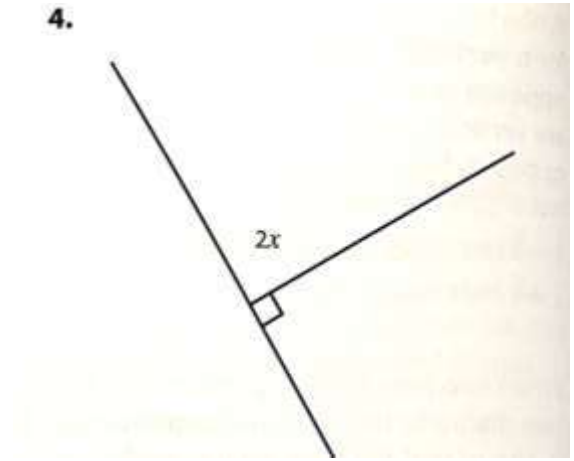
2.



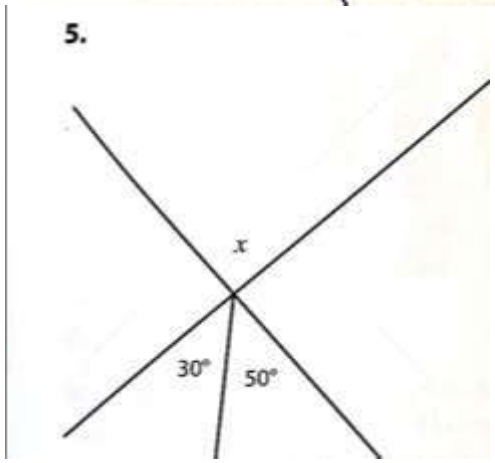
3.



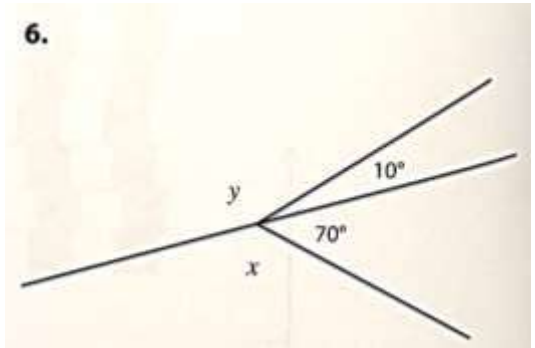
4.



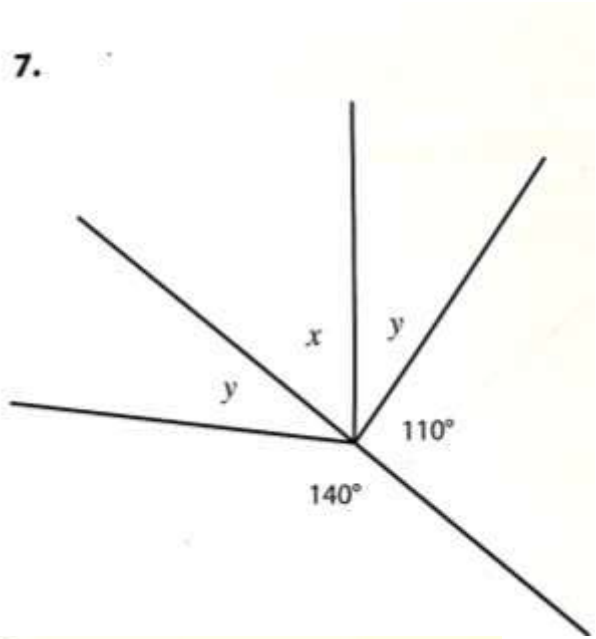
5.



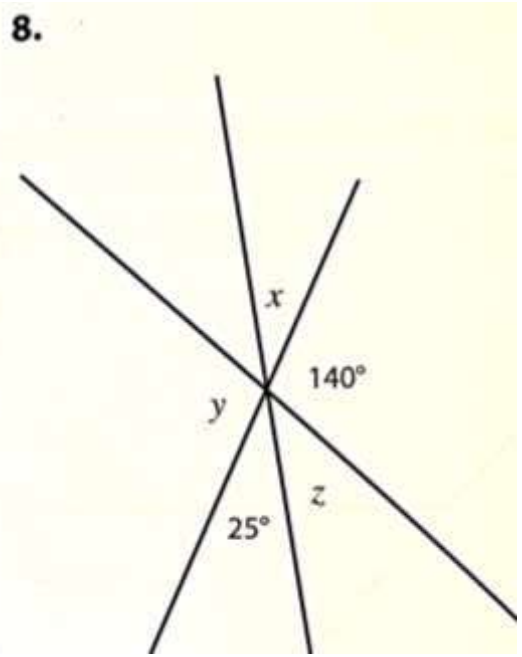
6.



7.



8.

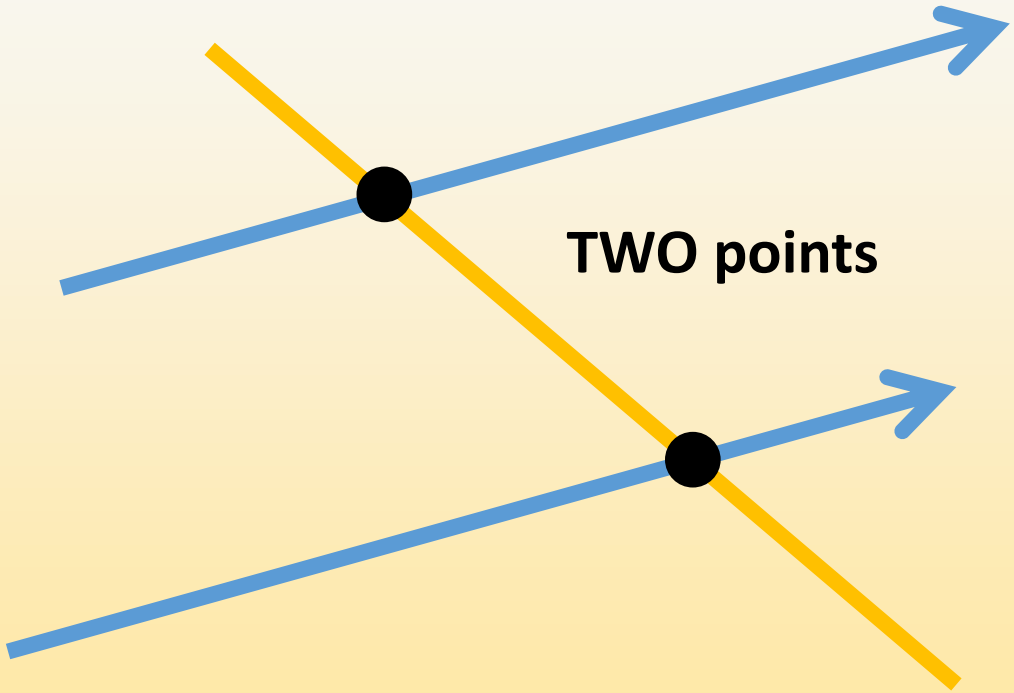


GEOMETRY OF STRAIGHT LINES

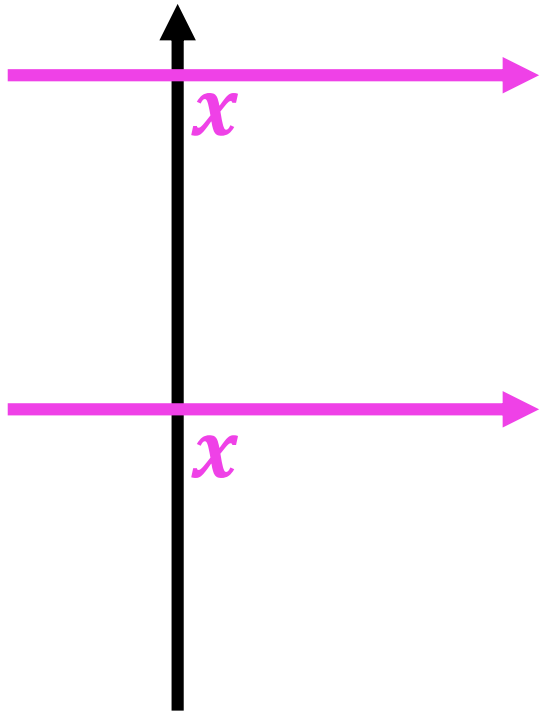
Topic 10

VIDEO 2

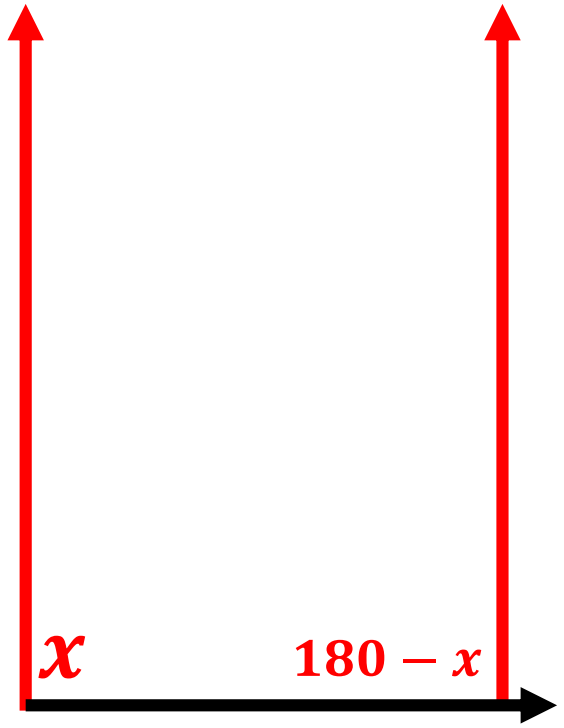
Angles at TWO points (parallel lines)



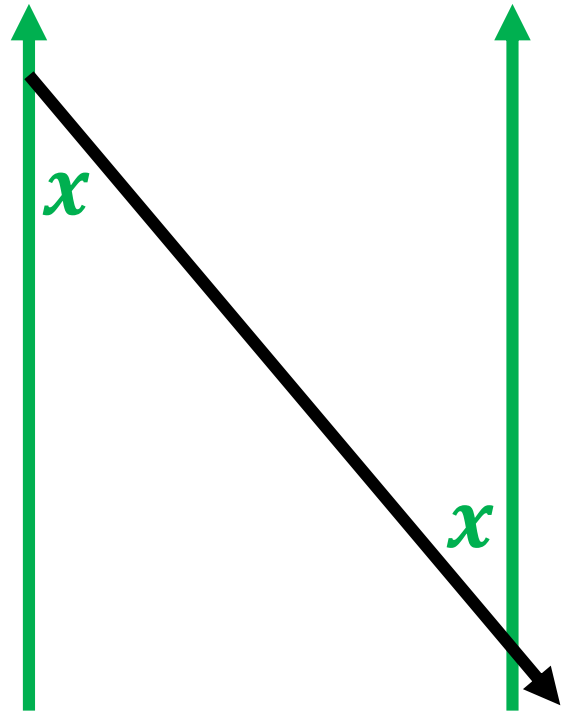
Angles at TWO points (parallel lines)



$corr\ \angle' s =$

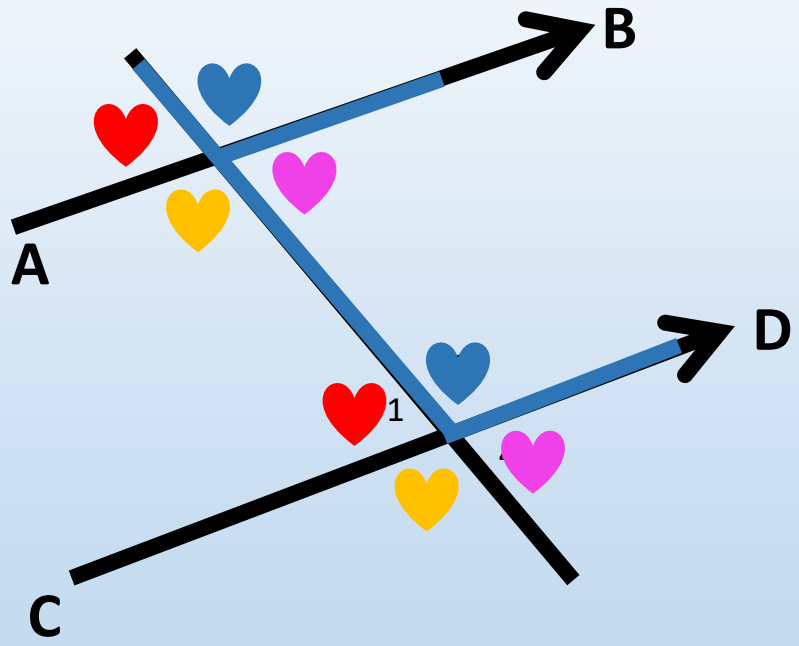


$co - int\ \angle' s\ supp$

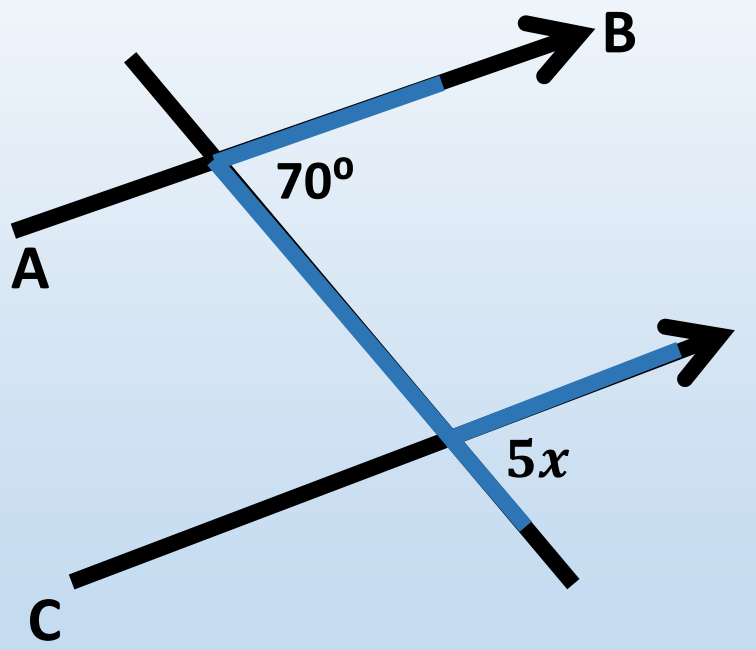


$alt\ \angle' s =$

$$Corresp\measuredangle s = ; AB \| CD$$

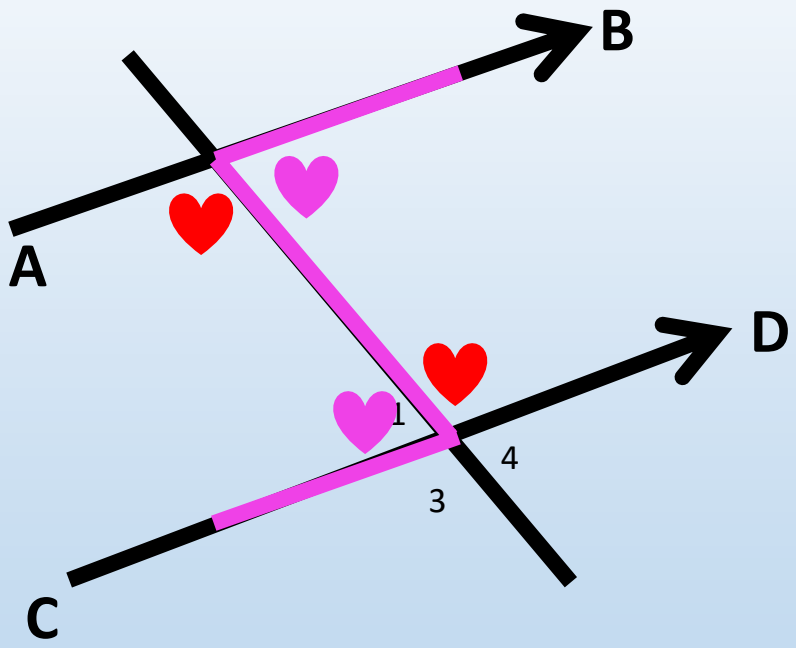


$Corresp\measuredangle s = ; AB \| CD$

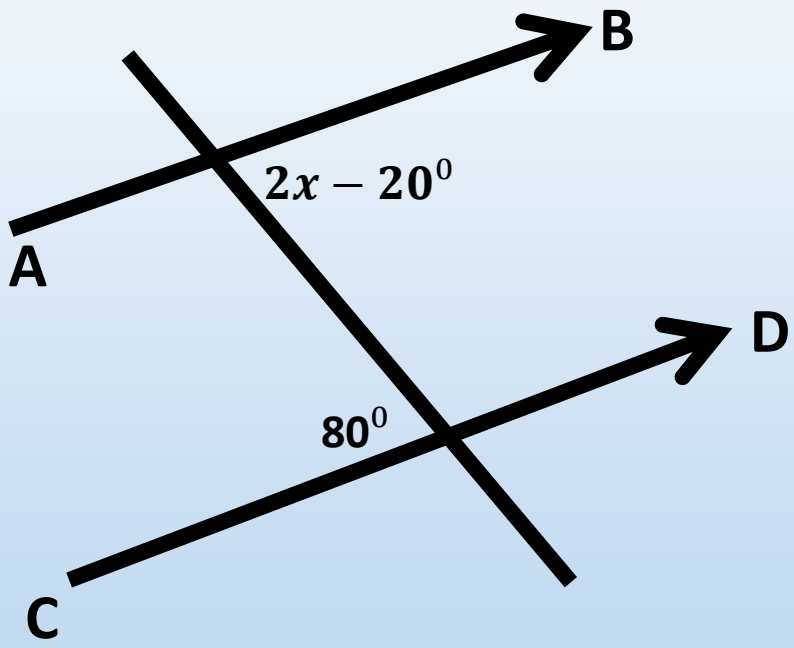


Statement	Reason
$\frac{5x}{5} = \frac{70^0}{5}$	$Corresp\measuredangle s =$;AB‖CD
$x = 14^0$	

$$Alt\measuredangle s =; AB \| CD$$

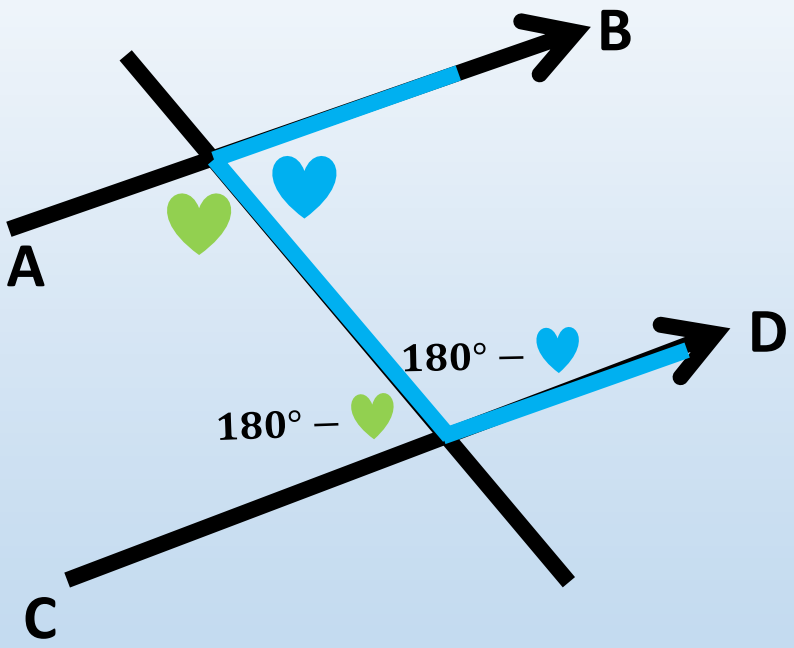


$Alt\measuredangle s = \ ; AB \| CD$

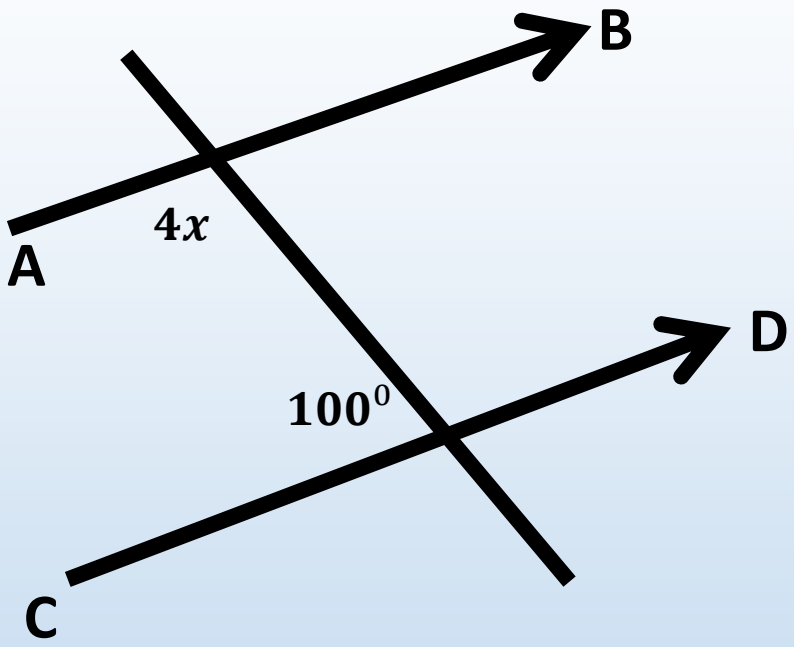


Statement	Reason
$2x - 20^0 = 80^0$	$Alt\measuredangle s =; AB \| CD$
$2x = 80° + 20°$	
$2x = 100°$	
$x = 50°$	

$Co - int\measuredangle s$ supp; $AB \| CD$



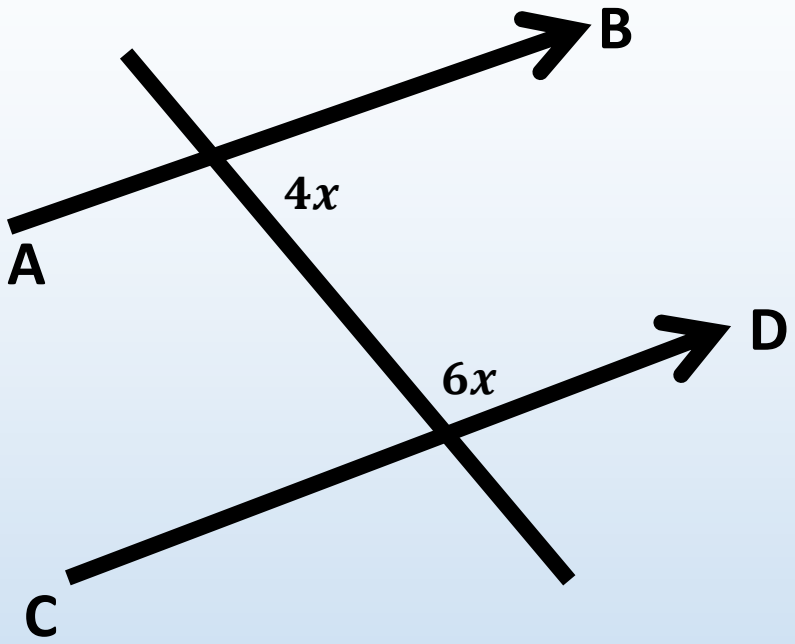
$Co - int\measuredangle s$ supp ; $AB \| CD$



Statement	Reason
$4x + 100° = 180^0$	$\text{Co} - \text{int}\measuredangle s supp$; $AB \| CD$
$4x = 180° - 100°$	
$4x = 80°$	
$x = 20°$	

$Co - int\measuredangle s$ supp ; $AB \| CD$

Statement	Reason
$4x + 6x = 180^0$	$\text{Co} - \text{int}\measuredangle s supp$; $AB \| CD$
$10x = 180°$	
$x = 18°$	



GEOMETRY OF STRAIGHT LINES

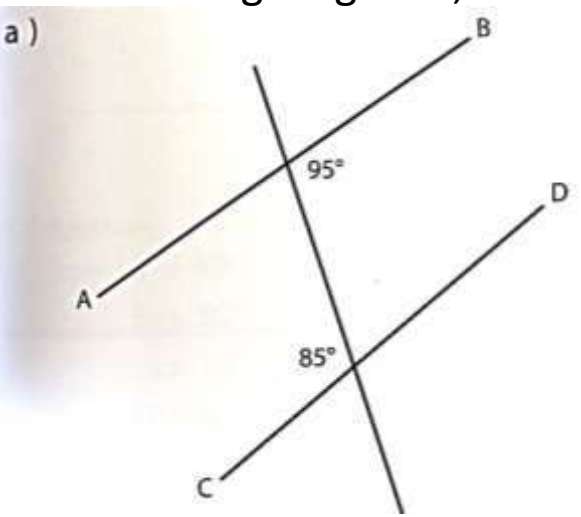
Topic 10

Ex 10.2 Pg. 91

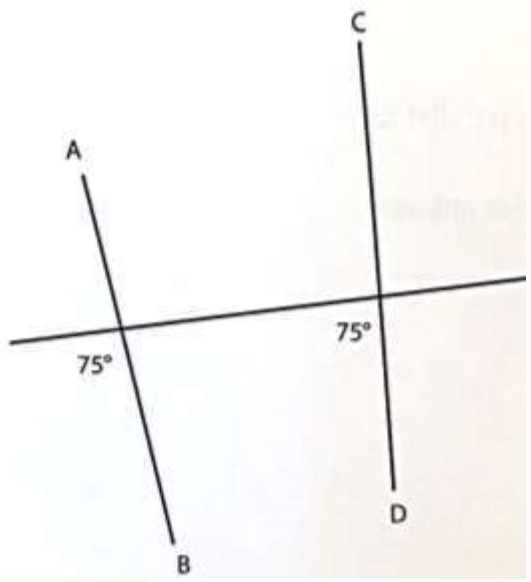
EXERCISE 10.2 Pg. 91

1. State whether lines AB and CD are parallel in the following diagrams, with reasons.

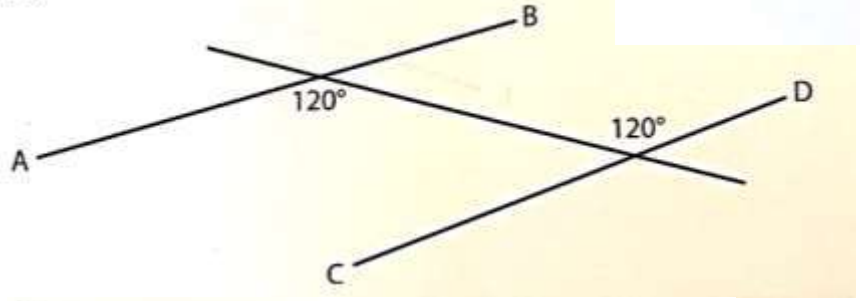
a)



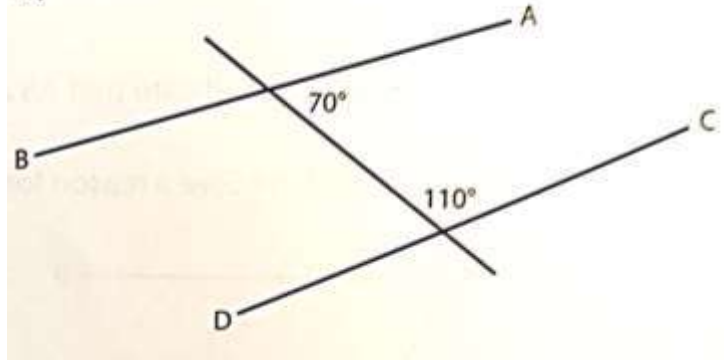
c)



b)

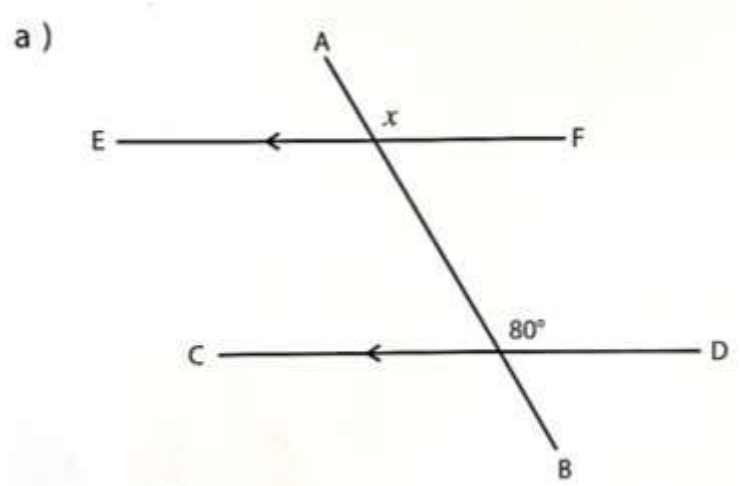


d)

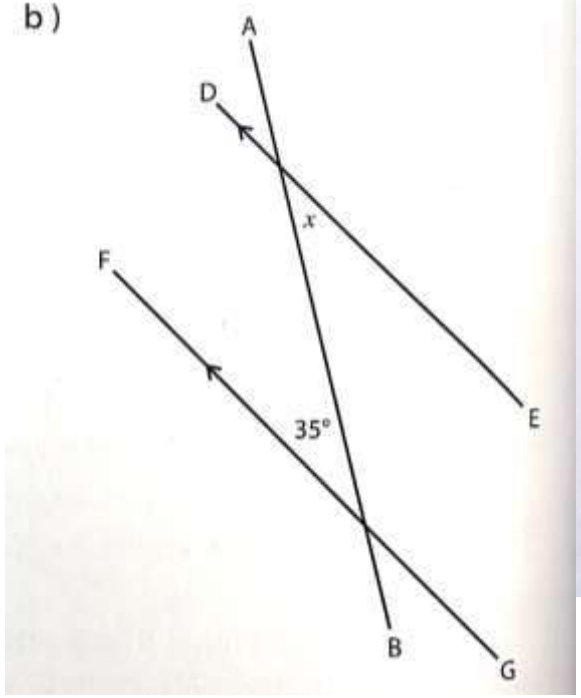


2. Calculate the unknown angles in each of the following, giving reasons for all your statements

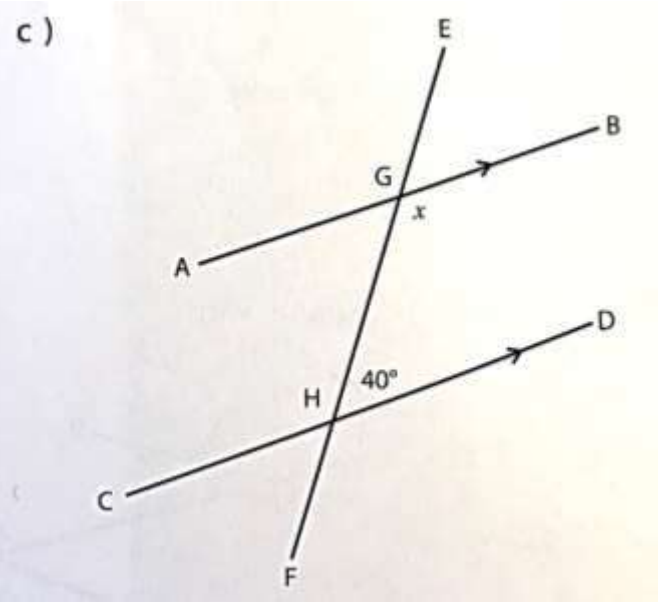
a)



b)



c)

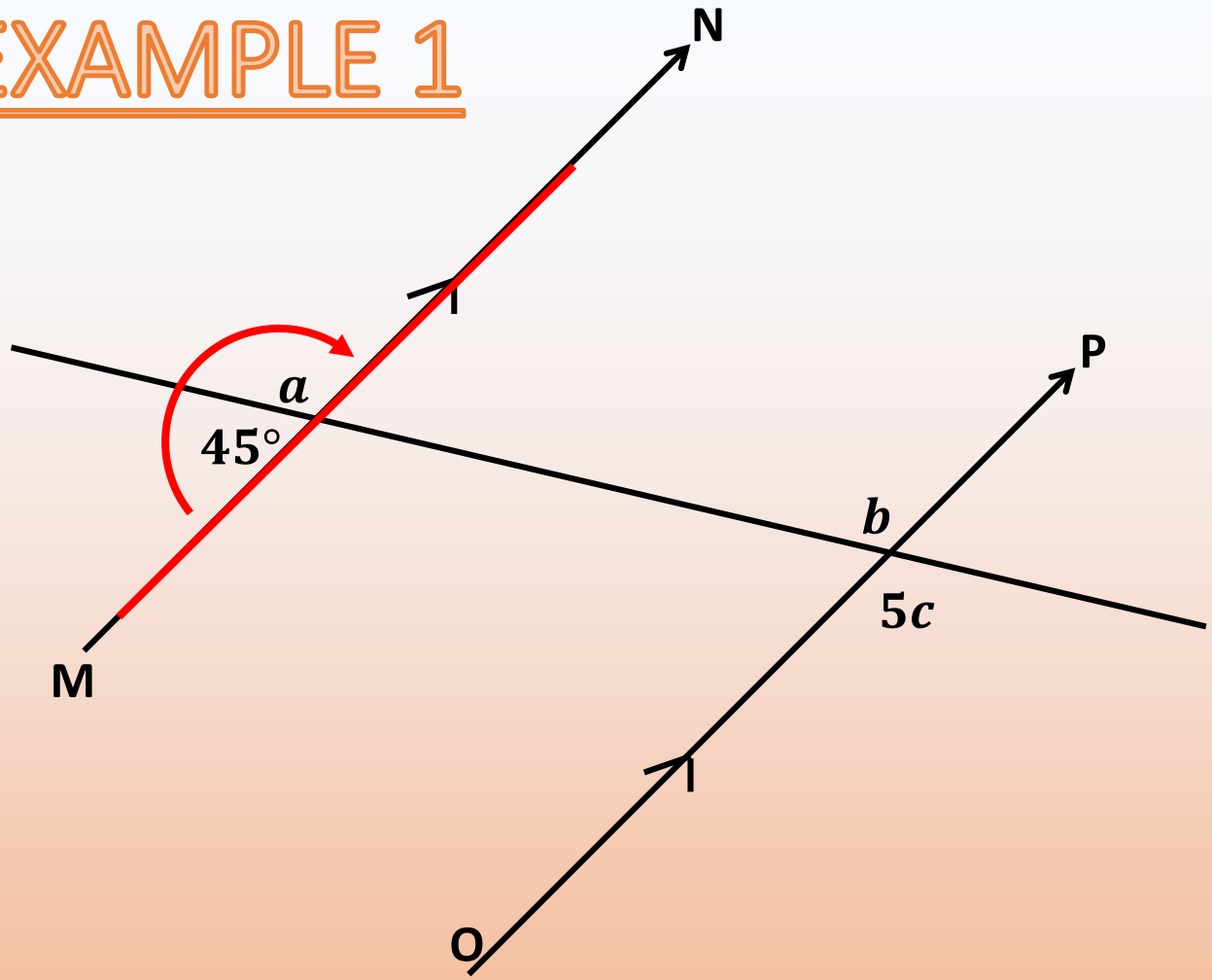


GEOMETRY OF STRAIGHT LINES

Topic 10

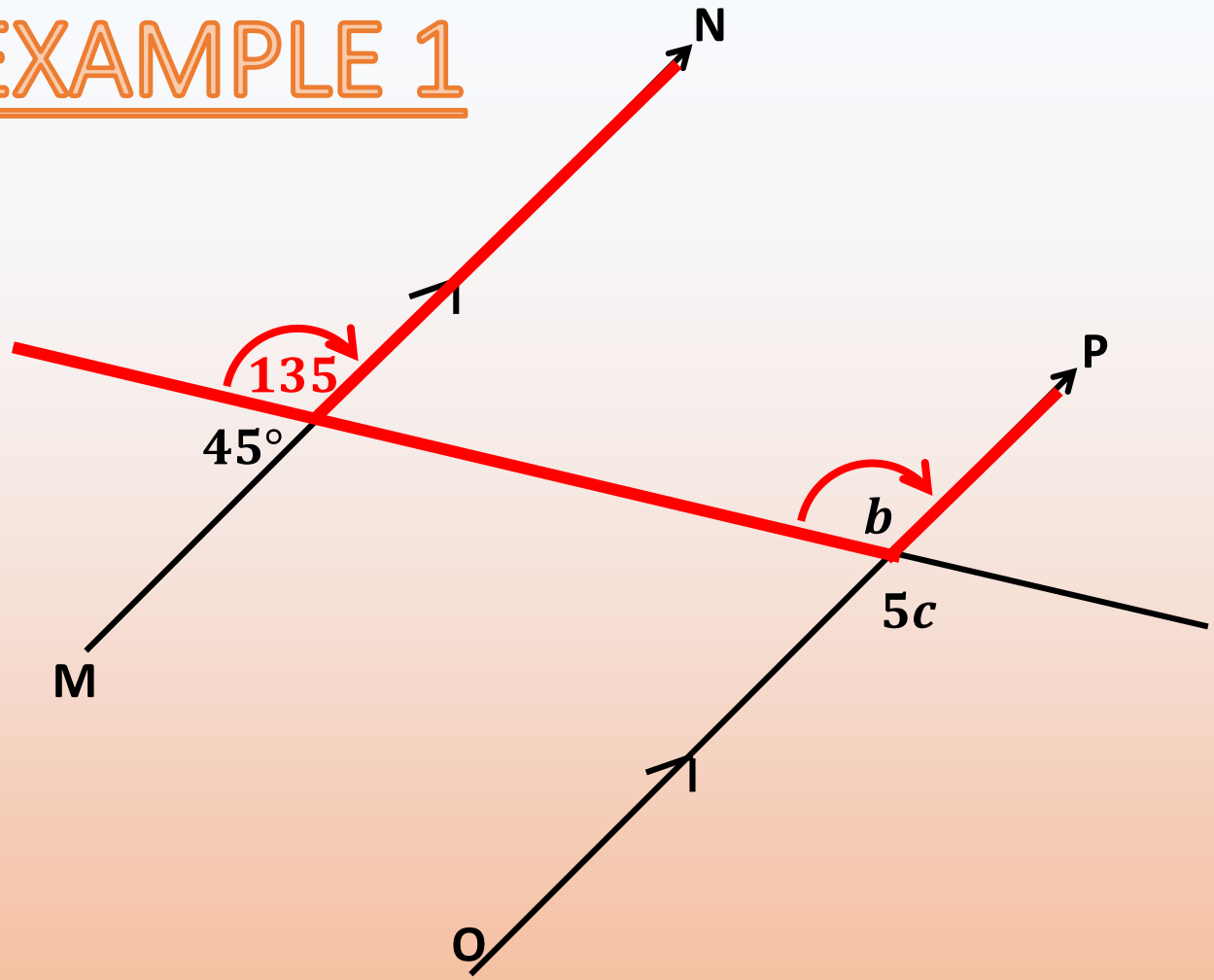
VIDEO 3

EXAMPLE 1



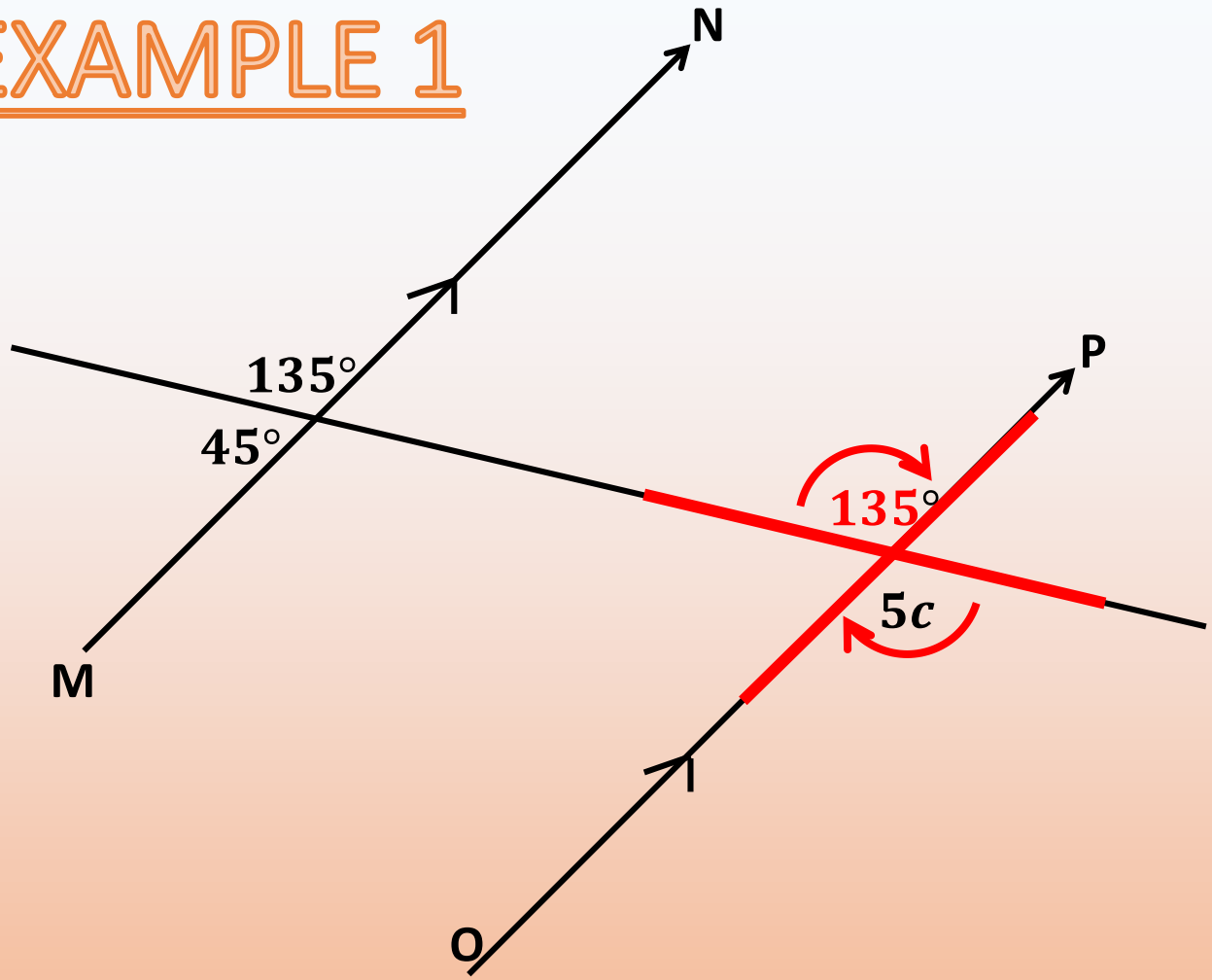
Statement	Reason
$a + 45° = 180°$	$\angle's\ on\ a\ str\ line$
$a = 180° - 45°$	
$a = 135°$	

EXAMPLE 1



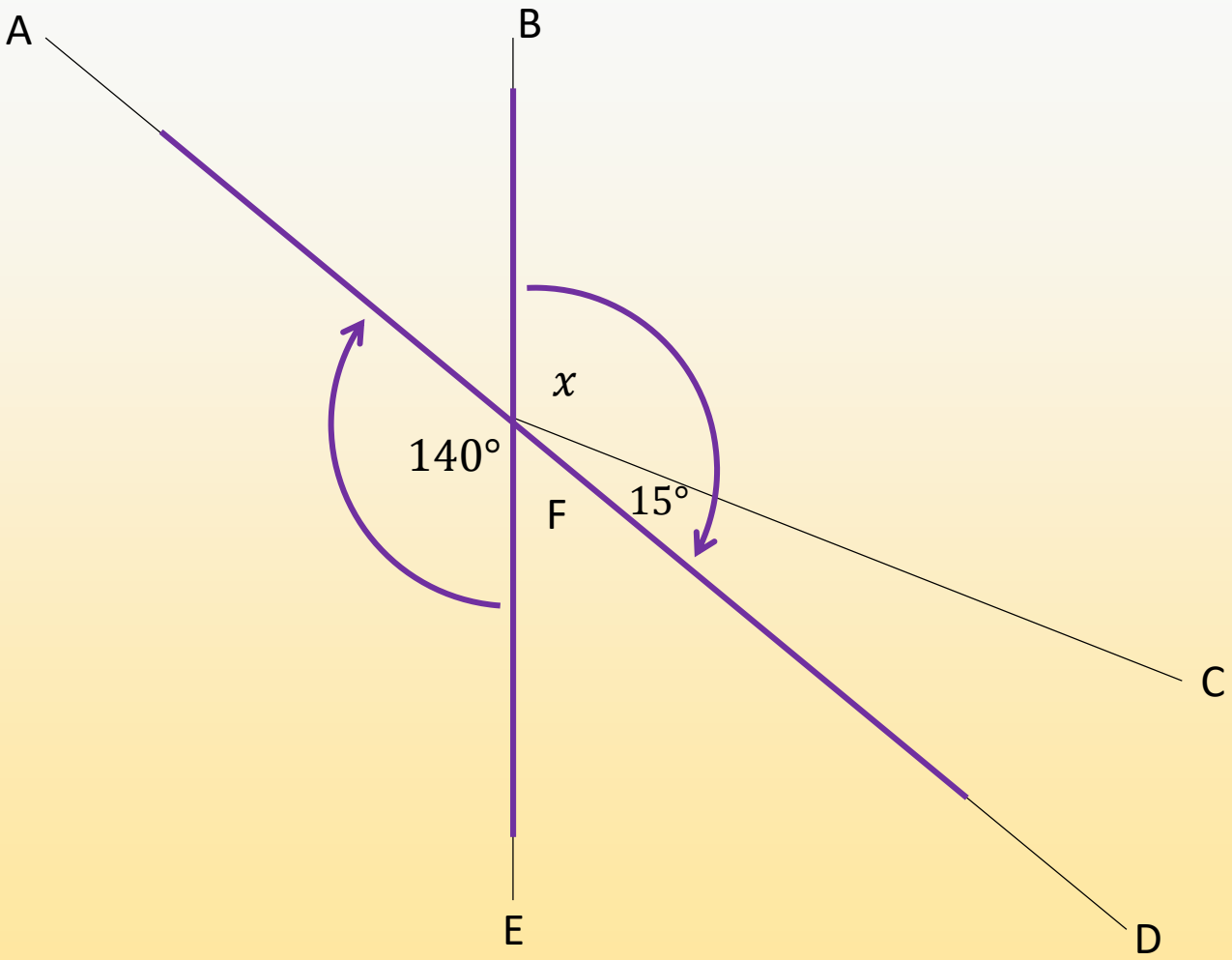
Statement	Reason
$a + 45° = 180°$	$\angle' s\ on\ a\ str\ line$
$a = 180° - 45°$	
$a = 135°$	
$b = 135°$	$Corr \angle' s =; MN \parallel OP$

EXAMPLE 1



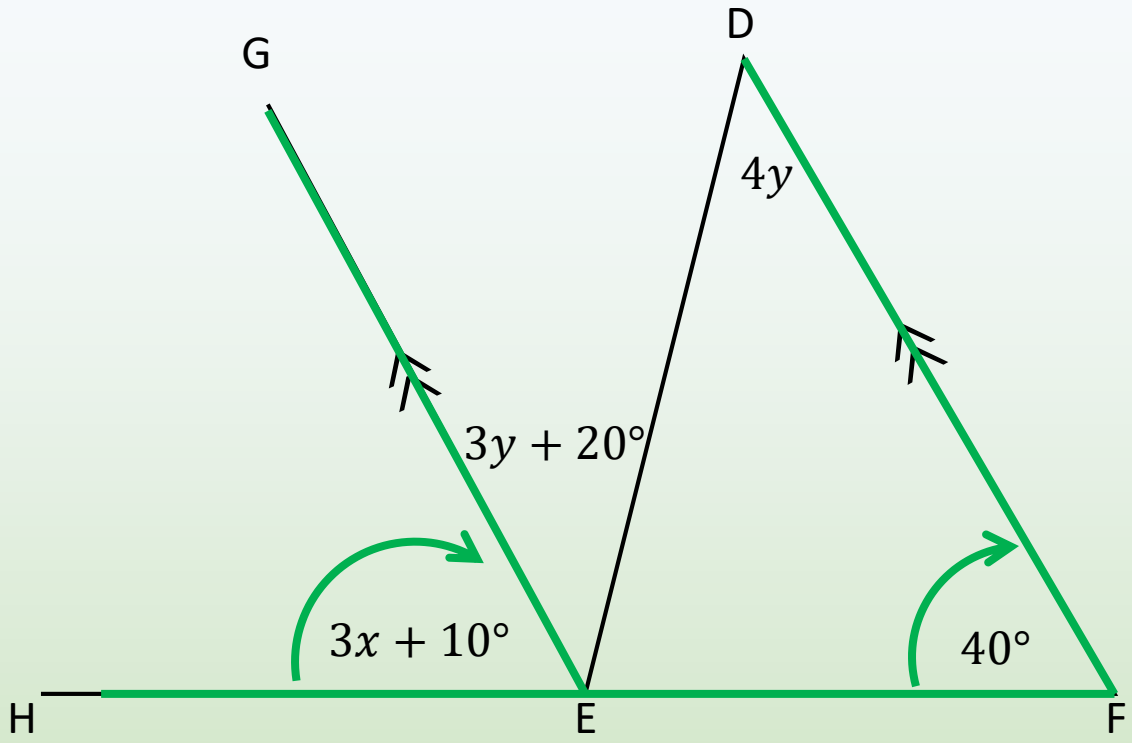
Statement	Reason
$a + 45° = 180°$	$\angle' s\ on\ a\ str\ line$
$a = 180° - 45°$	
$a = 135°$	
$b = 135°$	$Corr \angle' s =; MN \parallel OP$
$5c = 135°$	$Vert\ opp\ \angle' s =$
$c = 27°$	

EXAMPLE 2



Statement	Reason
$x + 15° = 140°$	$Vert\ opp\ \angle's =$
$x = 140° - 15°$	
$x = 125°$	

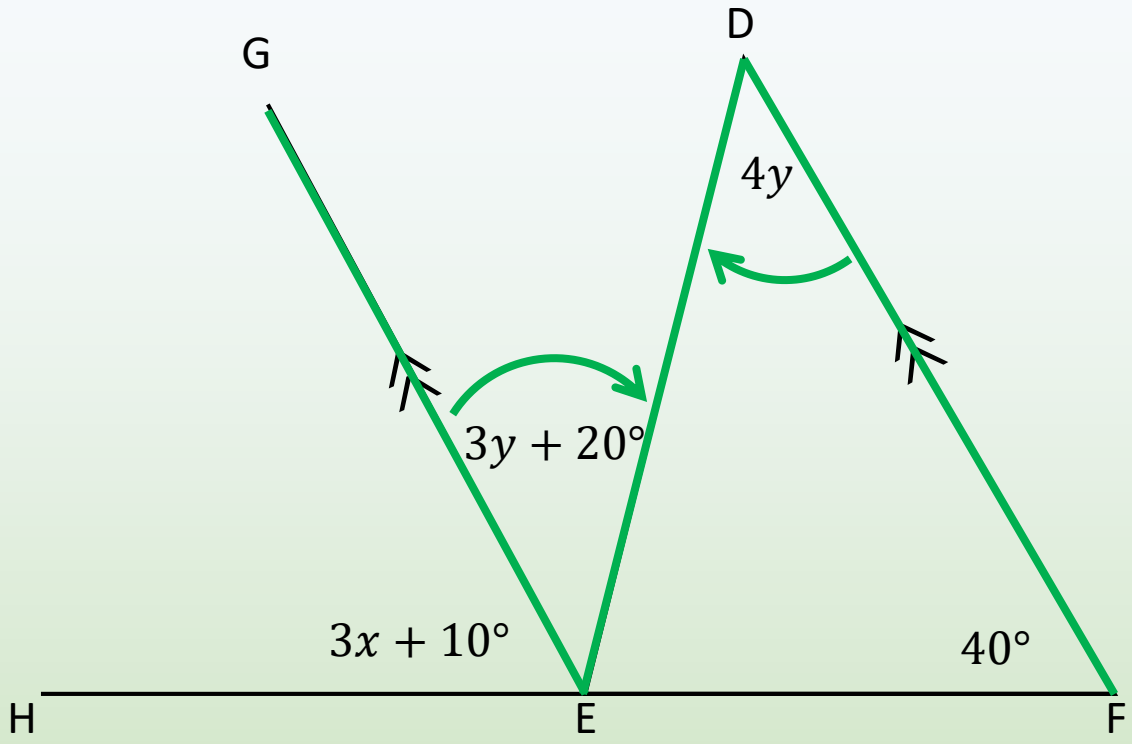
EXAMPLE 3



Determine the value of x and y.
Remember to provide reasons.

Statement	Reason
$3x + 10° = 40°$	$Corr\angle's =; EG \parallel FD$
$3x = 40° - 10°$	
$3x = 30°$	
$x = 10°$	

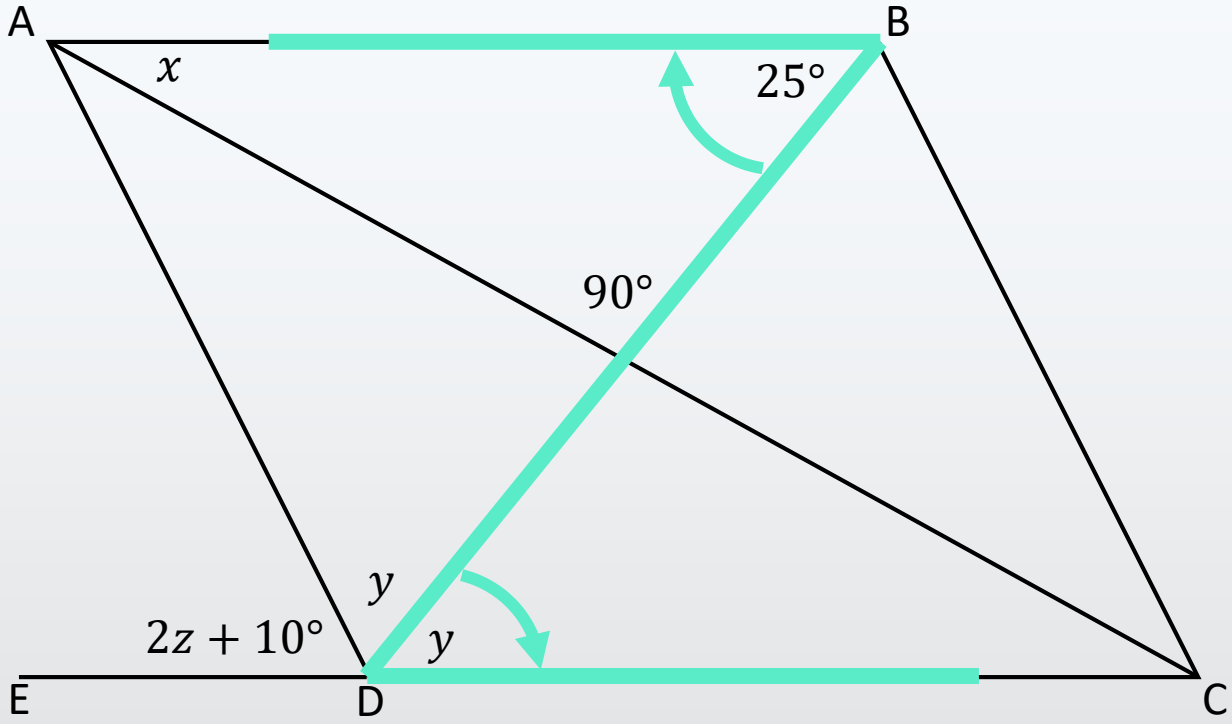
EXAMPLE 3



Determine the value of x and y.
Remember to provide reasons.

Statement	Reason
$3x + 10° = 40°$	$Corr\angle's =; EG \parallel FD$
$3x = 40° - 10°$	
$3x = 30°$	
$x = 10°$	
$3y + 20° = 4y$	$Alt\angle's =; EG \parallel FD$
$20° = 4y - 3y$	
$20° = y$	

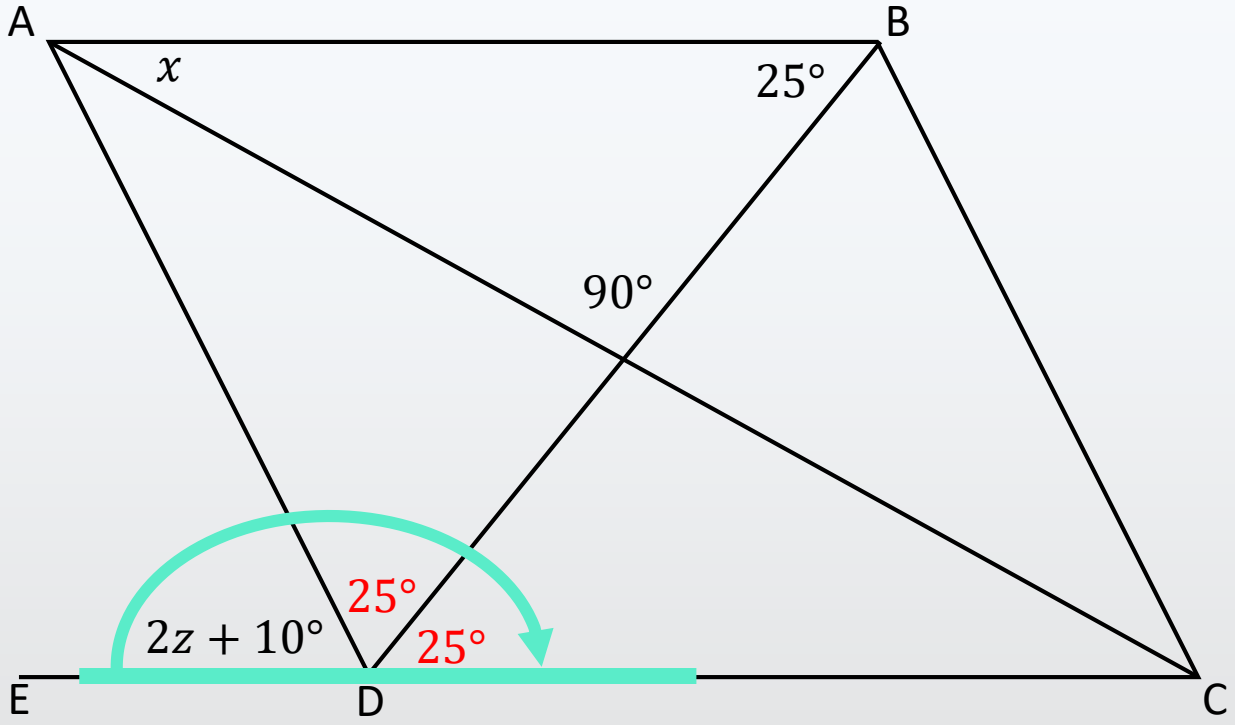
EXAMPLE 4



Given that ABCD is a rhombus, determine the unknown values in the diagram.

Statement	Reason
$y = 25°$	$Alt\angle's =; AB \parallel DC$

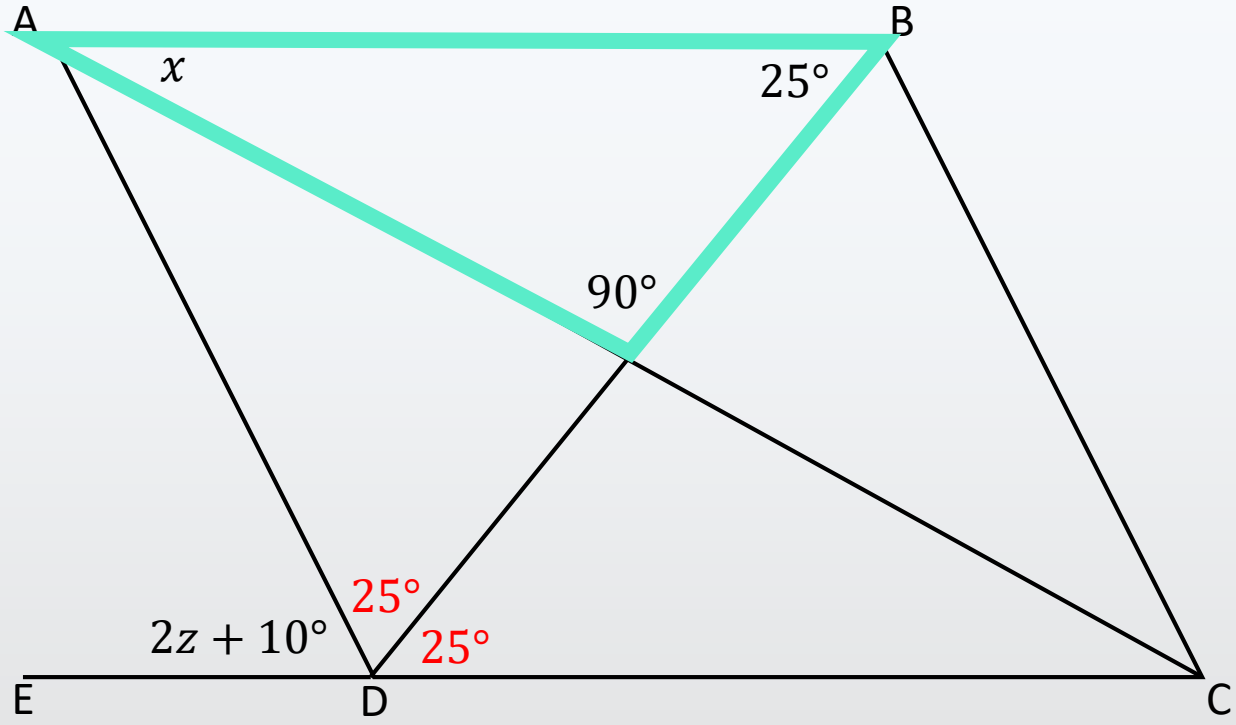
EXAMPLE 4



Given that ABCD is a rhombus, determine the unknown values in the diagram.

Statement	Reason
$y = 25°$	$Alt\angle's =; AB \parallel DC$
$2z + 10° + 25° + 25° = 180°$	$\angle's\ on\ a\ str\ line$
$2z + 60° = 180°$	
$2z = 180° - 60°$	
$2z = 120°$	
$z = 60°$	

EXAMPLE 4



Given that ABCD is a rhombus, determine the unknown values in the diagram.

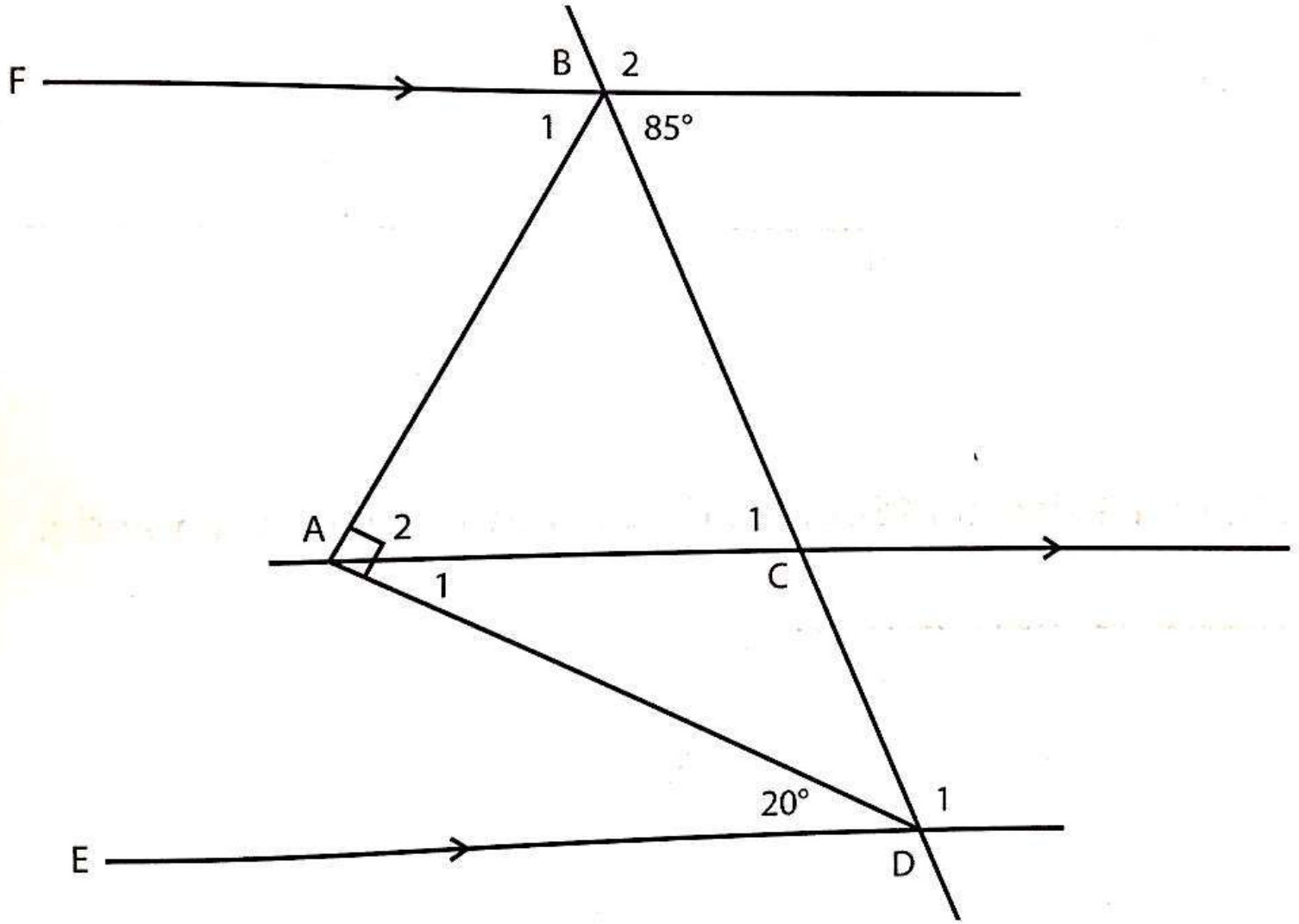
Statement	Reason
$y = 25°$	$Alt\angle's =; AB \parallel DC$
$2z + 10° + 25° + 25° = 180°$	$\angle's\ on\ a\ str\ line$
$2z + 60° = 180°$	
$2z = 180° - 60°$	
$2z = 120°$	
$z = 60°$	
$x + 25° + 90° = 180°$	$\angle's\ in\ a\ \Delta$
$x = 180° - 90° - 25°$	
$x = 65°$	

GEOMETRY OF STRAIGHT LINES

Topic 10

Ex 10.3 Pg. 91

EXERCISE 10.3 Pg. 95 (No. 1,2,3)



1.) Determine the sizes of the following angles and give reasons for your answers:

a.) $\hat{A}_1$

b.) $\hat{A}_2$

c.) $\hat{B}_1$

d.) $\hat{B}_2$

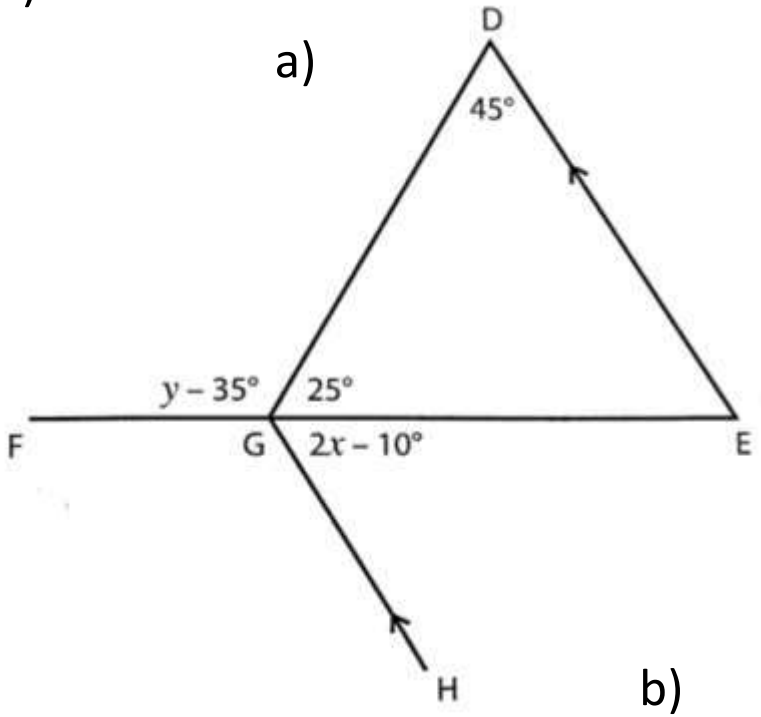
e.) $\hat{C}_1$

f.) $\hat{D}_1$

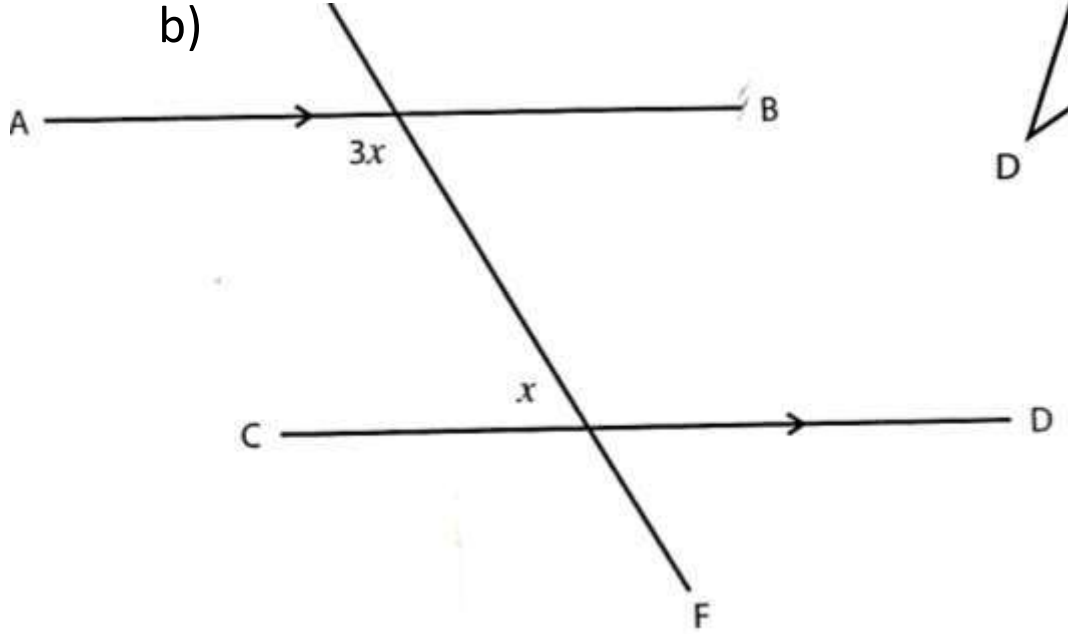
EXERCISE 10.3 Pg. 95

2.) Determine the unknown values in the following diagrams, giving reasons for your statements.

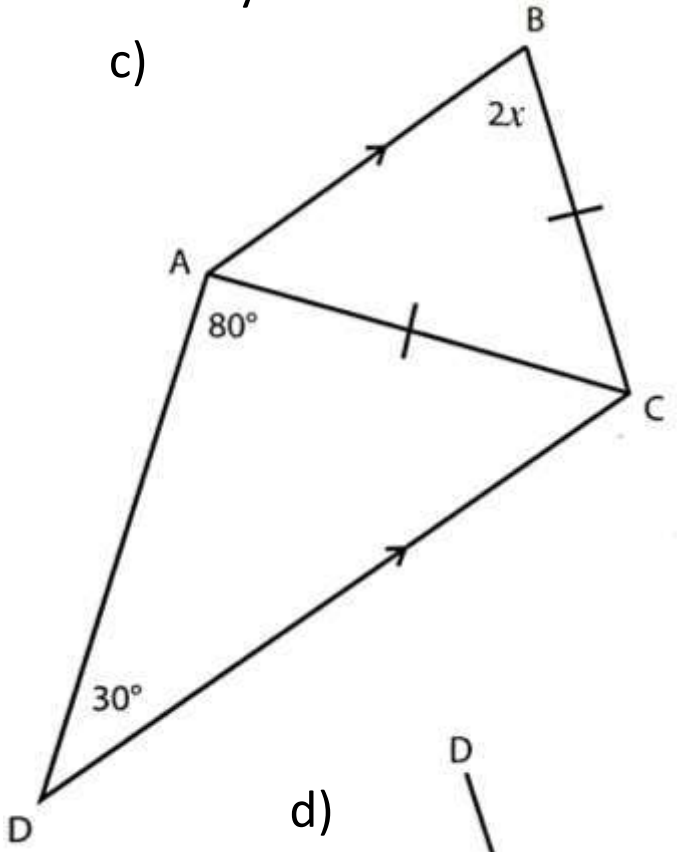
a)



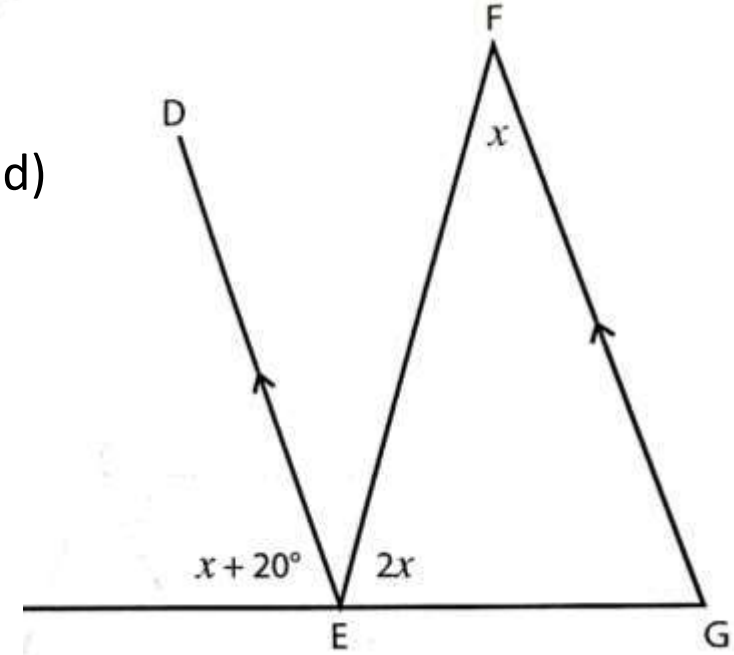
b)



c)

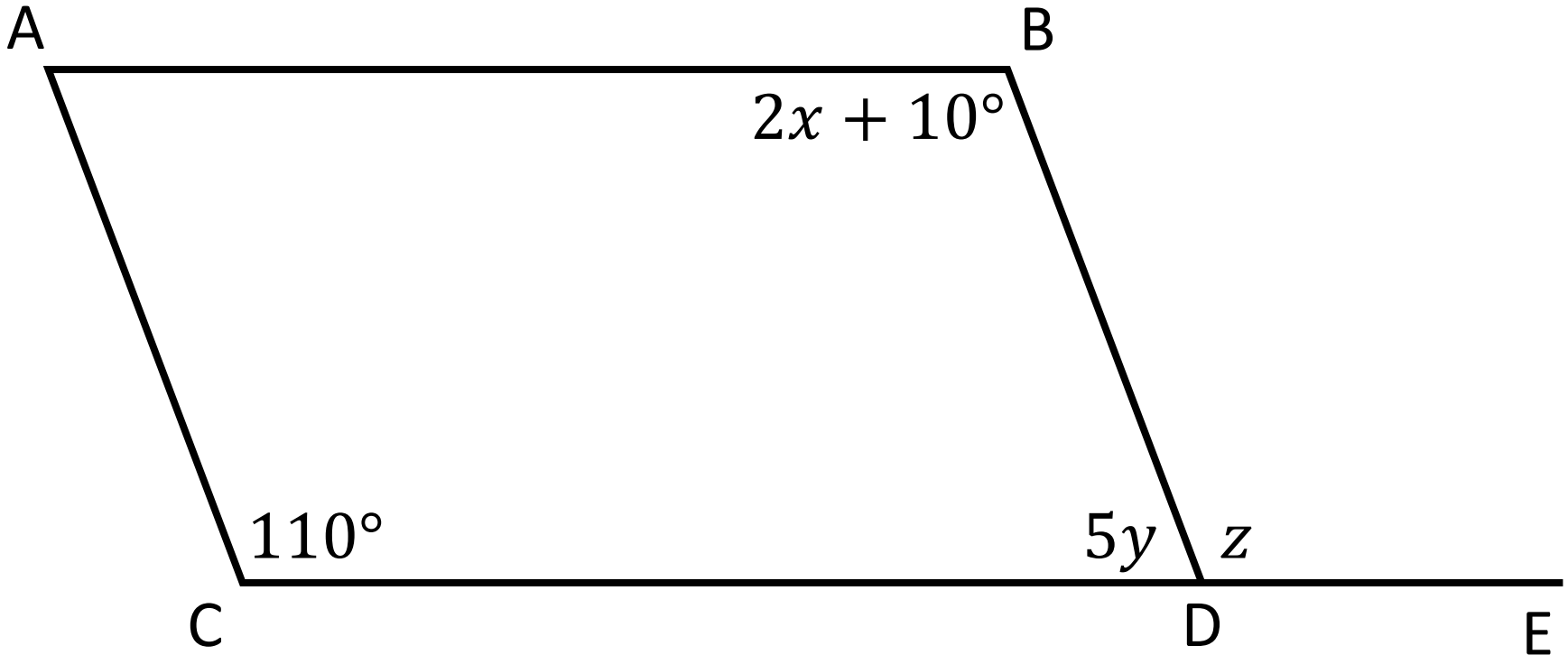


d)



EXERCISE 10.3 Pg. 95

3.) Consider the parallelogram ABCD, and determine the values of x, y and z.



GEOMETRY OF STRAIGHT LINES

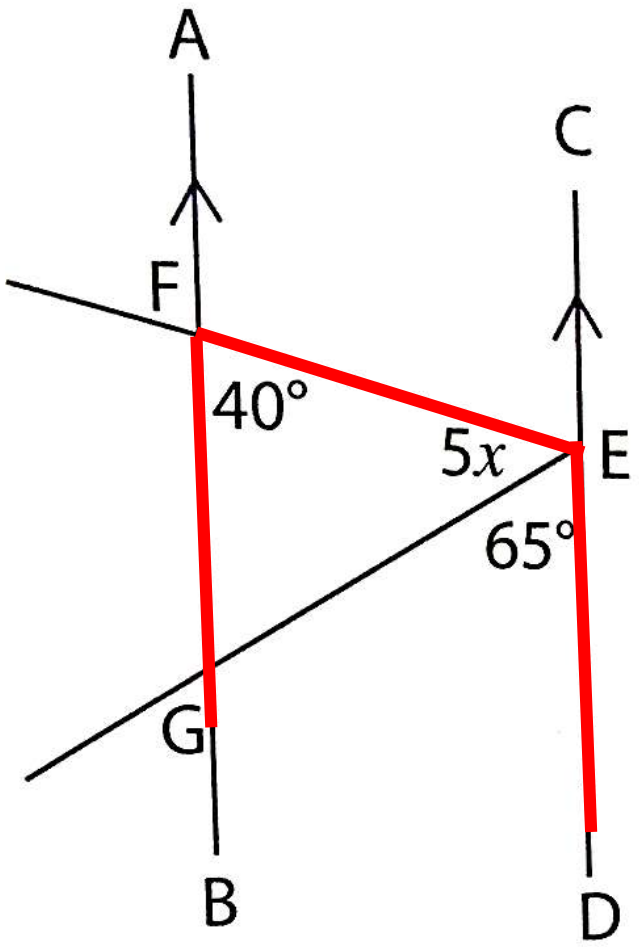
Topic 10

VIDEO 4

REVISION EXERCISE Pg. 97

1.) Determine the unknown values, giving reasons for your answers.

a.)

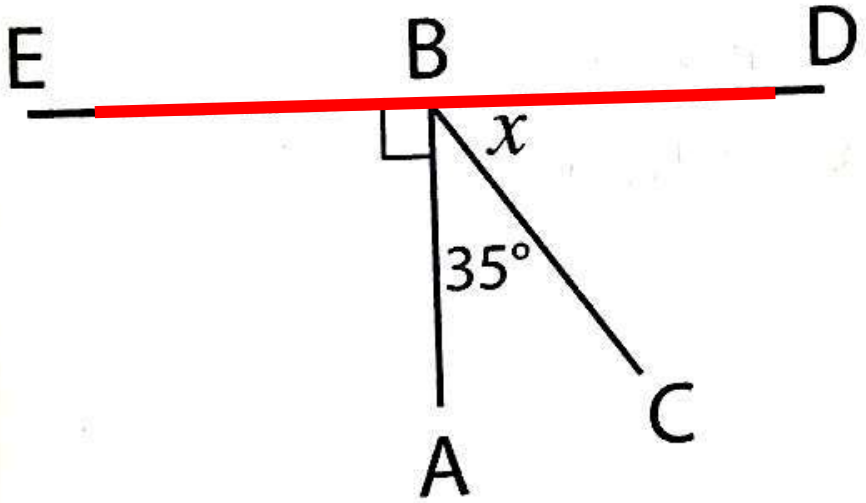


Statement	Reason
$(5x + 65°) + 40° = 180°$	$Co - int\ \angle's\ supp; AB \parallel CD$
$5x = 180° - 40° - 65°$	
$5x = 75°$	
$x = 15°$	

REVISION EXERCISE Pg. 97

1.) Determine the unknown values, giving reasons for your answers.

b.)

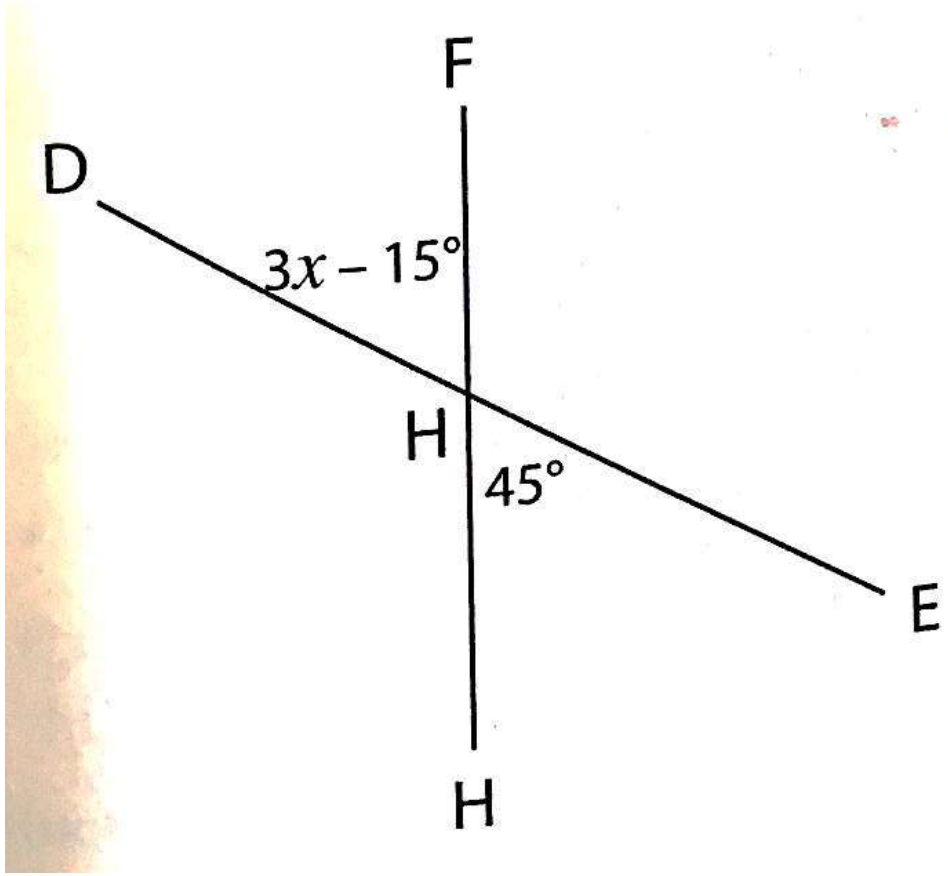


Statement	Reason
$90° + 35° + x = 180°$	$\angle's\ on\ a\ str\ line$
$x = 180° - 90° - 35°$	
$x = 55°$	

REVISION EXERCISE Pg. 97

1.) Determine the unknown values, giving reasons for your answers.

c.)

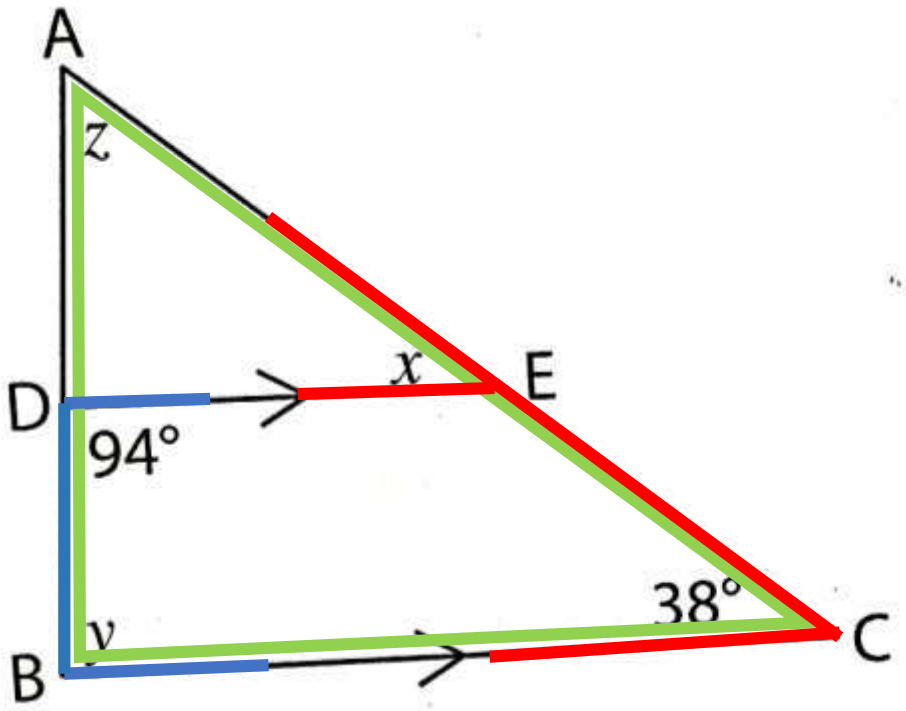


Statement	Reason
$3x - 15° = 45°$	Vert $opp\ \angle's =$
$3x = 45° + 15°$	
$3x = 60°$	
$x = 20°$	

REVISION EXERCISE Pg. 97

1.) Determine the unknown values, giving reasons for your answers.

d.



Statement	Reason
$x = 38°$	$Corr\ \angle's =; DE \parallel BC$
$94° + y = 180°$	$Co - int \angle's\ supp; DE \parallel BC$
$y = 180° - 94°$	
$y = 86°$	
$z + y + 38° = 180°$	$\angle's\ in\ a\ \Delta$
$z + (86°) + 38° = 180°$	
$z = 180° - 86° - 38°$	
$z = 56°$	

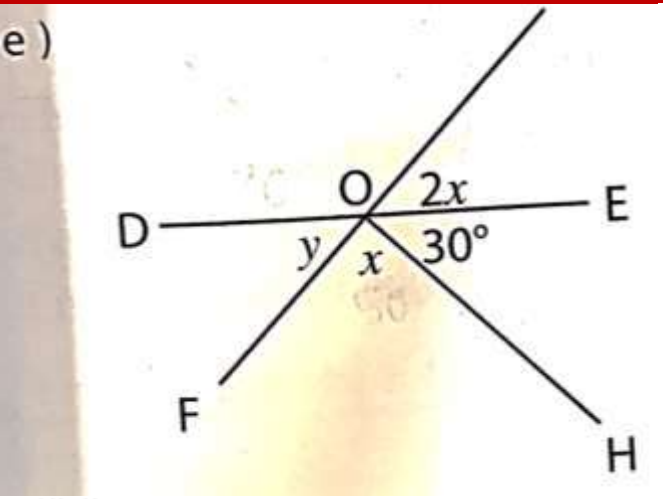
GEOMETRY OF STRAIGHT LINES

Topic 10

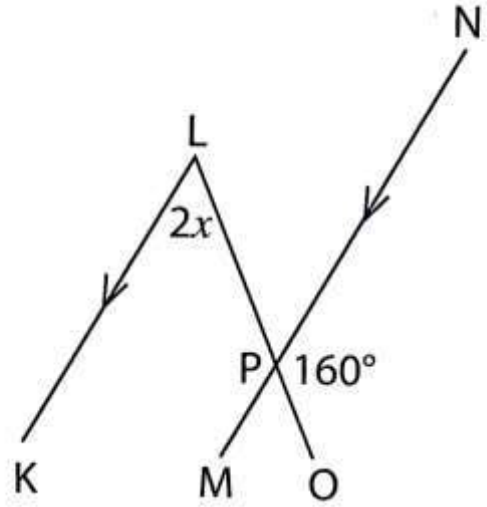
Rev Ex Pg. 97 (1e-h, 2a-b)

REVISION EXERCISE Pg. 97 (No.1e-h, 2a-b)

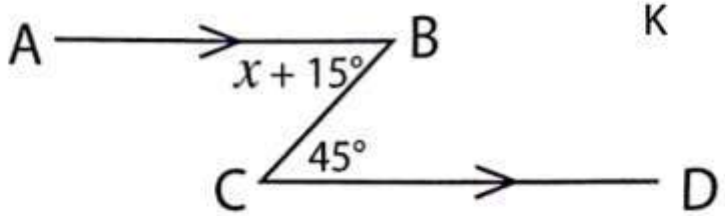
e)



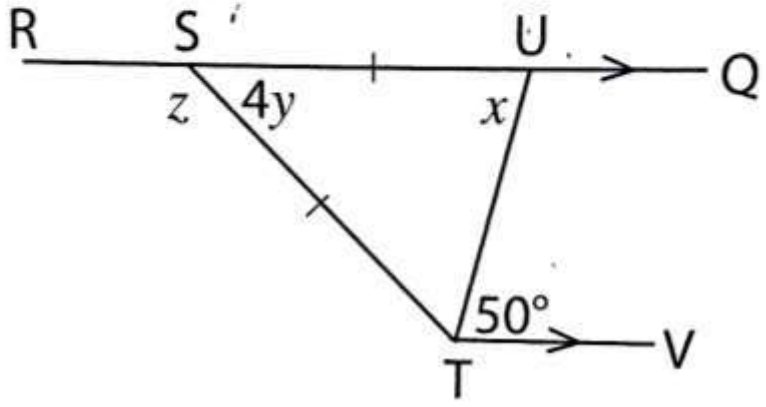
h)



f)

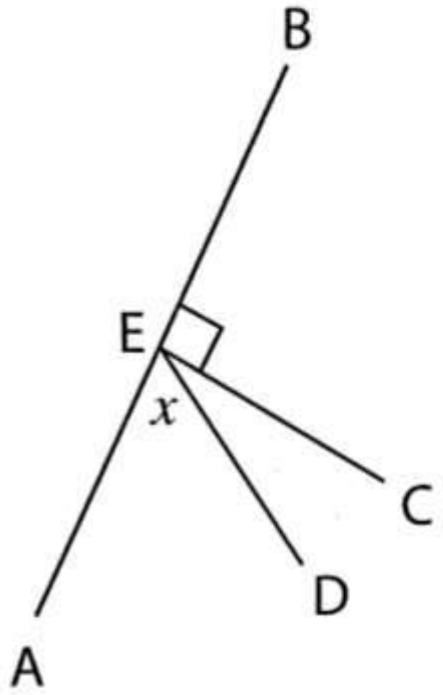


g) SU = ST



2. Express each of the following in terms of x, reasons for all your statements.

a) $D\hat{E}C = ?$



b) $G\hat{L}K = ?$