GEOMETRY OF STRAIGHT LINES

Topic 10

Exercise MEMOS

GEOMETRY OF STRAIGHT LINES

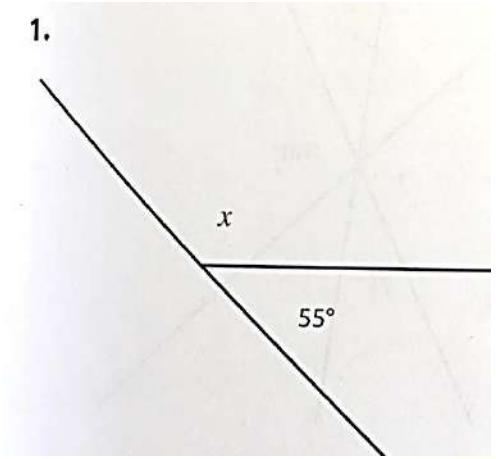
Topic 10

Ex 10.1 MEMO

EXERCISE 10.1 Pg. 87

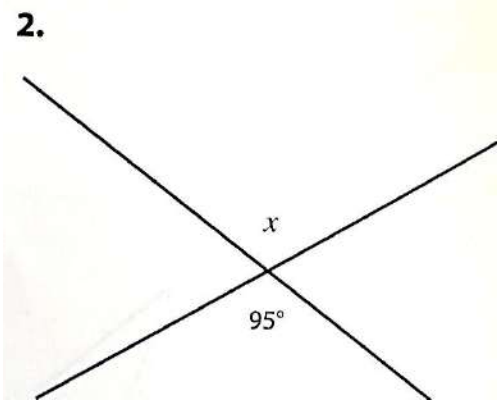
Calculate the unknown angles in each of the following, giving reasons for all your statements

1.



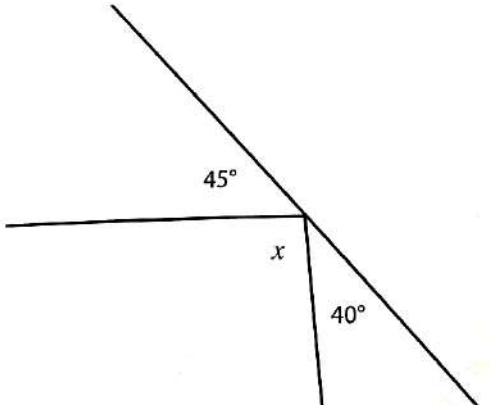
Statement	Reason
$x + 55° = 180°$	$\angle's\ on\ a\ str\ line$
$x = 180° - 55\ °$	
$x = 125°$	

2.



$x = 95°$	$Vert\ opp\ \angle's =$

3.

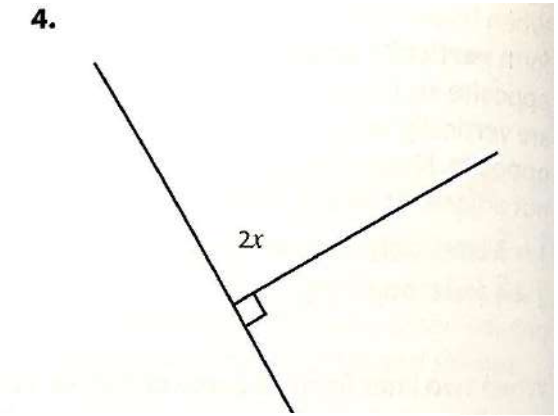


$45° + x + 40° = 180°$	$\angle's\ on\ a\ str\ line$
$x = 180° - 45° - 40°$	
$x = 95°$	

EXERCISE 10.1 Pg. 87

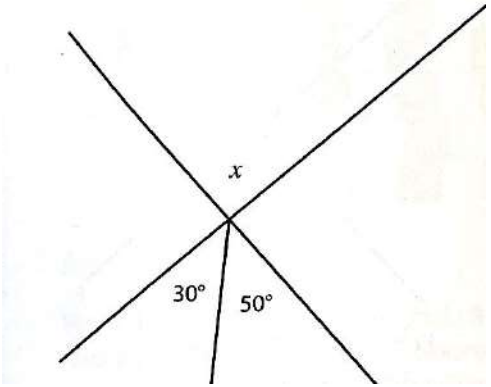
Calculate the unknown angles in each of the following, giving reasons for all your statements

4.



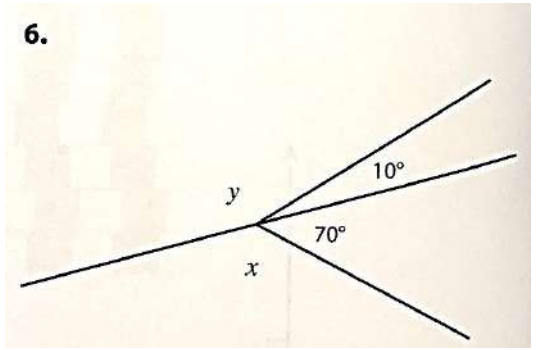
Statement	Reason
$2x + 90° = 180°$	$\angle' s \text{ on a str line}$
$2x = 180° - 90°$	
$2x = 90°$	
$x = 45°$	

5.



$x = 30° + 50°$	$Vert\ opp\ \angle' s =$
$x = 80°$	

6.

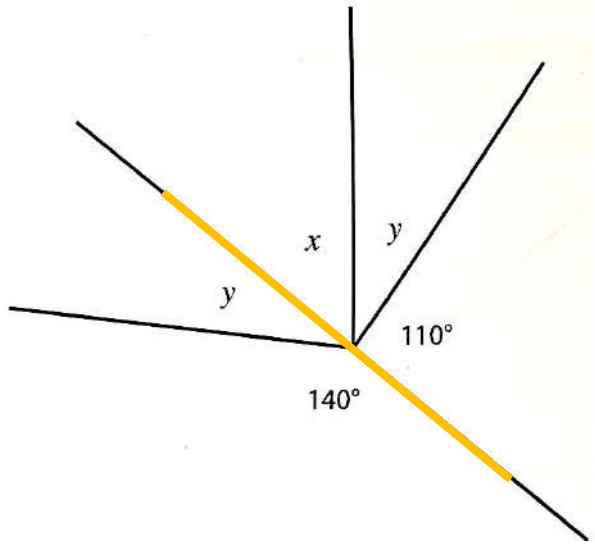


$x + 70° = 180°$	$\angle' s \text{ on a str line}$
$x = 180° - 70°$	
$x = 110°$	
$y + 10° = 180°$	$\angle' s \text{ on a str line}$
$y = 180° - 10°$	
$y = 170°$	

EXERCISE 10.1 Pg. 87

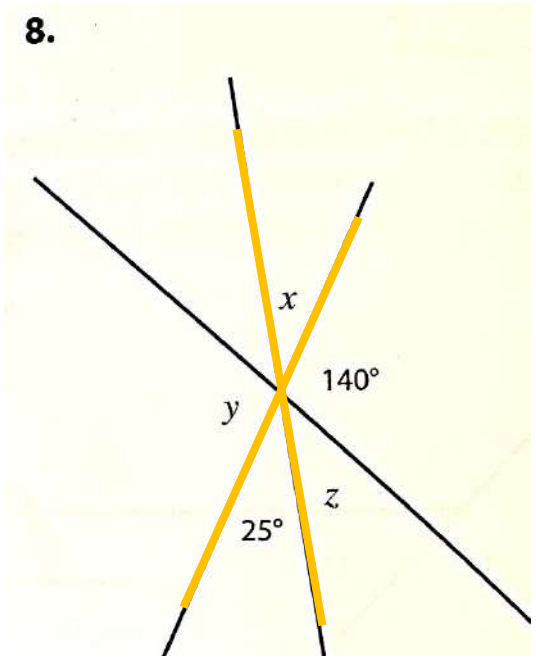
Calculate the unknown angles in each of the following, giving reasons for all your statements

7.



Statement	Reason
$y + 140° = 180°$	$\angle's\ on\ a\ str\ line$
$y = 180° - 140\ °$	
$y = 40°$	
$x + y + 110° = 180°$	$\angle's\ on\ a\ str\ line$
$x + (40°) + 110° = 180\ °$	
$x = 180° - 40° - 110°$	
$x = 30°$	

8.



$x = 25°$	$Vert\ opp\ \angle's =$
$y = 140°$	$Vert\ opp\ \angle's =$
$x + 140° + z = 180°$	
$(25°) + 140° + z = 180°$	
$z = 180° - 140° - 25°$	
$z = 15°$	

GEOMETRY OF STRAIGHT LINES

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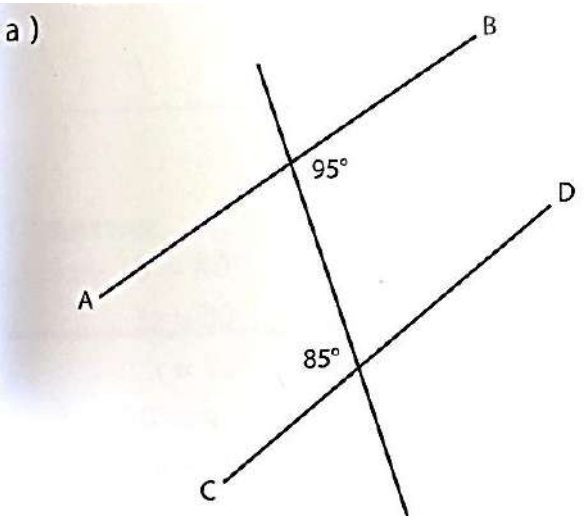
Ex 10.2 MEMO

EXERCISE 10.2 Pg. 91

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

a)



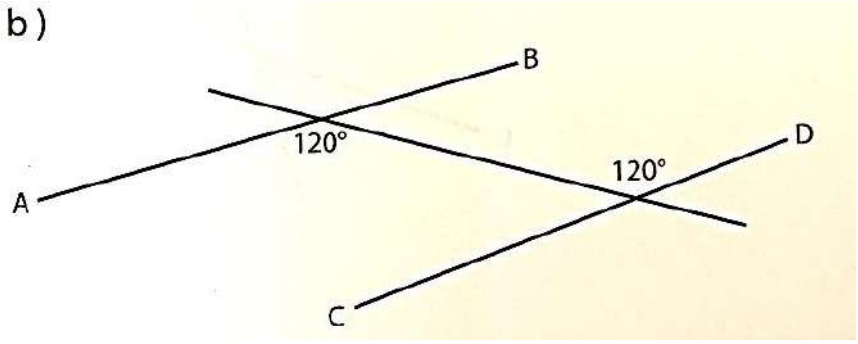
$\boldsymbol{AB \nparallel CD}$

(AB not parallel to CD)

$\boldsymbol{Alt\ \angle' s\ \neq}$

(Alternating Angles not Equal)

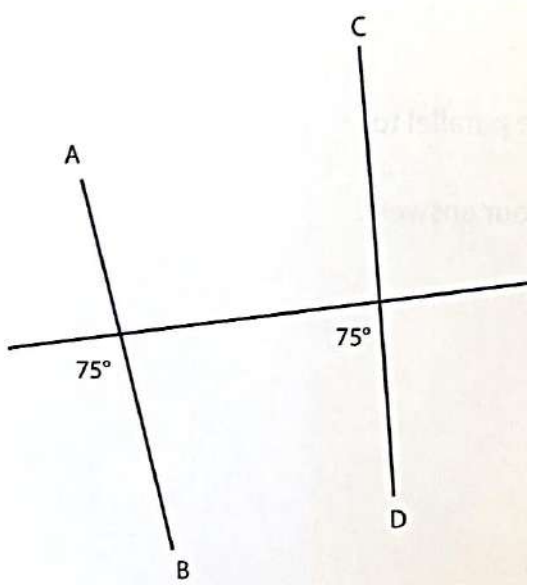
b)



$\boldsymbol{AB \parallel CD}$

$\boldsymbol{Alt\ \angle' s =}$

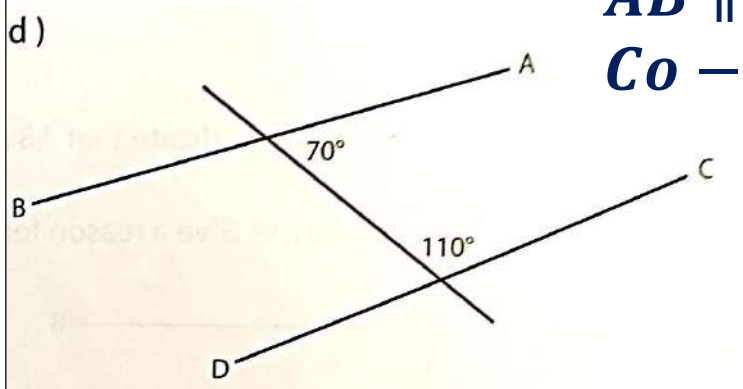
c)



$\boldsymbol{AB \parallel CD}$

$\boldsymbol{Corr\ \angle' s =}$

d)



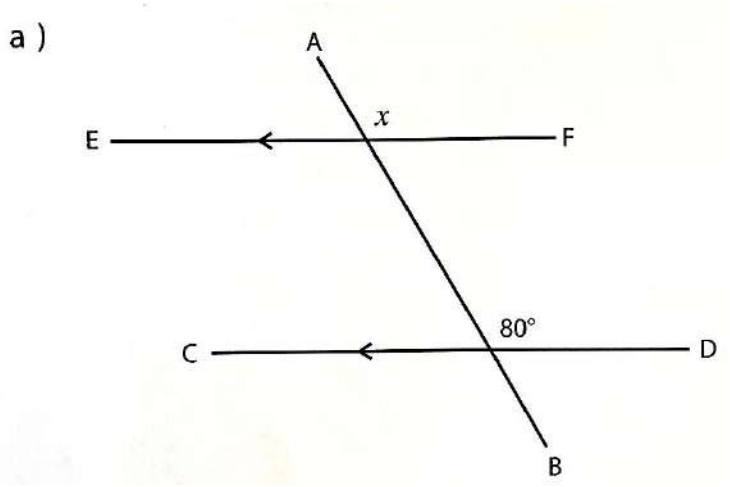
$\boldsymbol{AB \parallel CD}$

$\boldsymbol{Co - int\ \angle' s\ supp}$

EXERCISE 10.2 Pg. 91

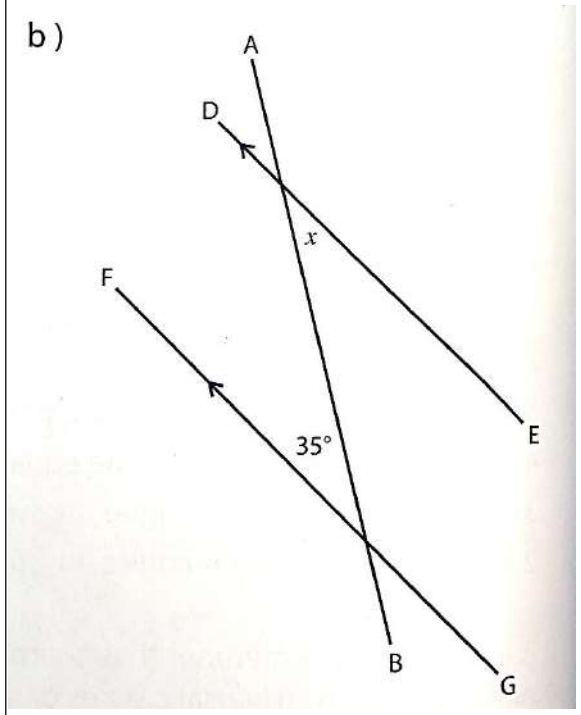
2. Calculate the unknown angles in each of the following, giving reasons for all your statements

a)



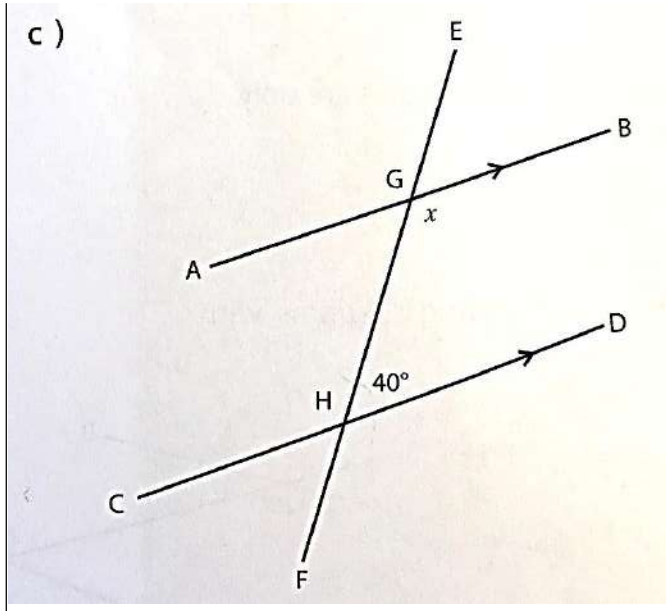
Statement	Reason
$x = 80°$	$Corr\ \angle's =; EF \parallel CD$

b)



Statement	Reason
$x = 35°$	$\text{Alt}\ \angle's =; DE \parallel FG$

c)



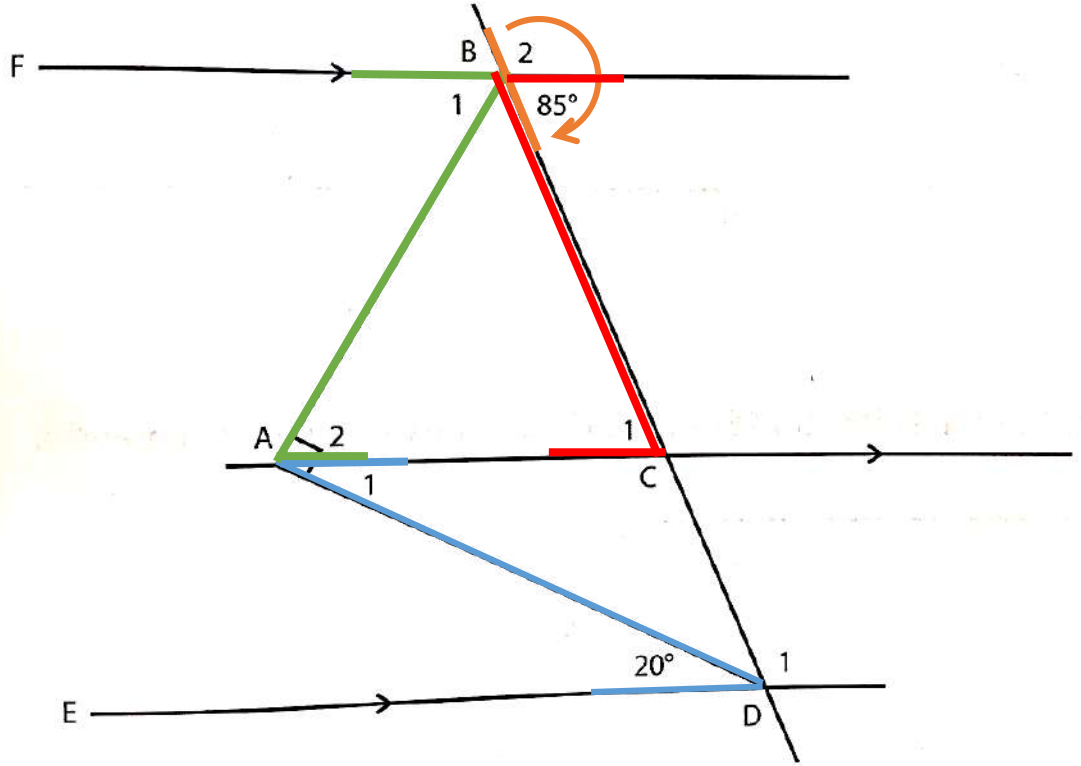
Statement	Reason
$x + 40 = 180°$	$\text{Co} - \text{int}\ \angle's\ supp; AB \parallel CD$
$x = 180° - 40°$	
$x = 140°$	

GEOMETRY OF STRAIGHT LINES

Topic 10

Ex 10.3 MEMO

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



a.) $\hat{A}_1 = 20$ $Alt\angle's = AC \parallel ED$

b.) $\hat{A}_2 = 70$ $Adj\ Comp\ \angle's$

(Angles Add up to 90)

c.) $\hat{B}_1 = 70$ $Alt\angle's = AC \parallel FB$

d.) $\hat{B}_2 + 85 = 180$ $\angle's\ on\ a\ str\ line$

$\hat{B}_2 = 180 - 85$

$\hat{B}_2 = 95$

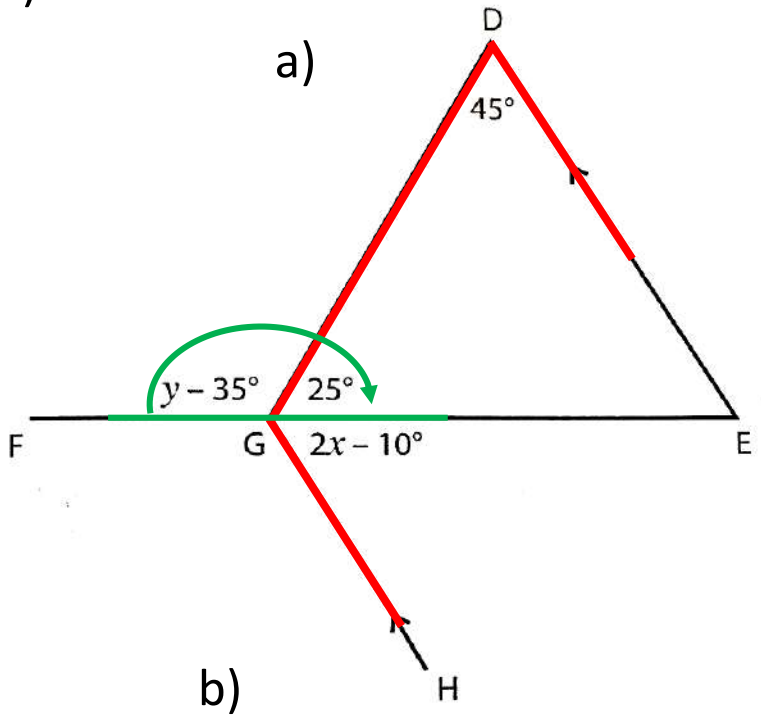
e.) $\hat{C}_1 = 85$ $Alt\angle's = AC \parallel FB$

f.) $\hat{D}_1 = 95$ $Co - int\angle's\ supp; FB \parallel ED$

EXERCISE 10.3 Pg. 95

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

a)



$45° + (25° + 2x - 10°) = 180°$ $\quad Co - int\angle's\ supp; GH \parallel DE$

$2x = 180° - 45° - 25° + 10°$

$2x = 120°$

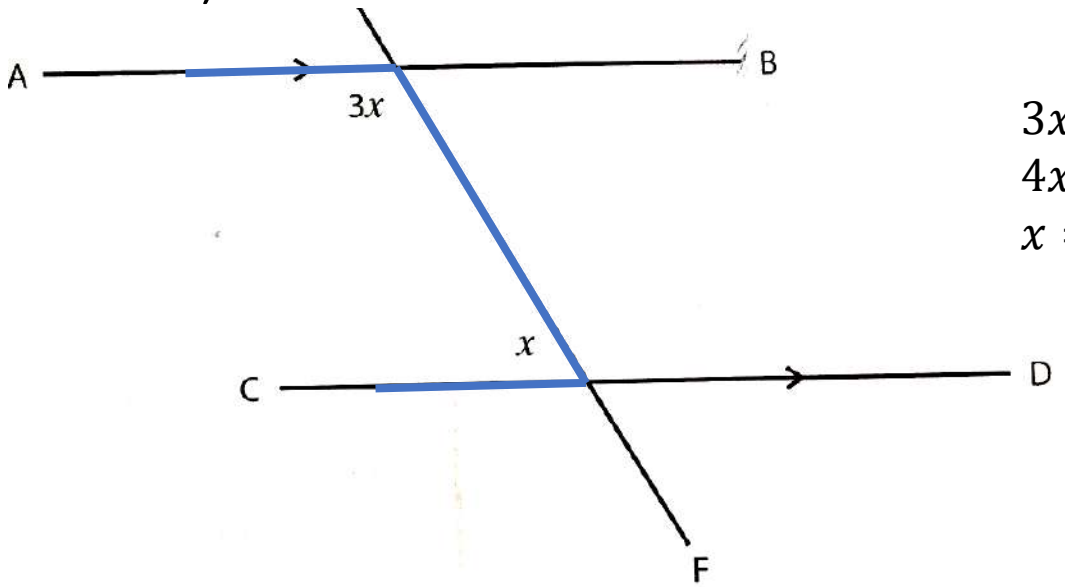
$x = 60°$

$y - 35° + 25° = 180°$ $\quad \angle's\ on\ a\ str\ line$

$y = 180 + 35 - 25$

$y = 190$

b)



$3x + x = 180°$ $\quad Co - int\angle's\ supp; AB \parallel CD$

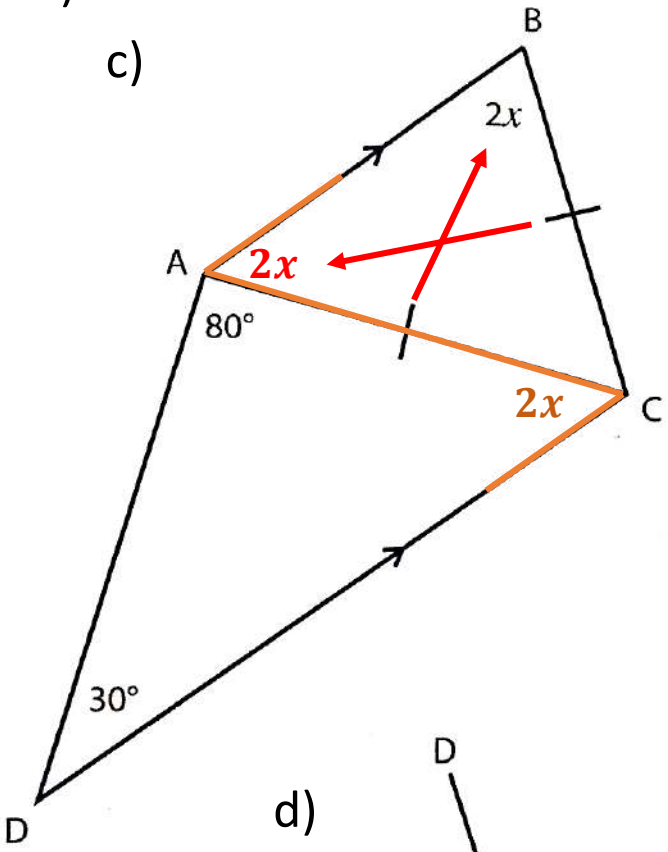
$4x = 180°$

$x = 45°$

EXERCISE 10.3 Pg. 95

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

c)



$B\hat{A}C = 2x$ $\quad \angle's\ opp = sides$

$A\hat{C}D = 2x$ $\quad Alt\ \angle's =; AB \parallel DC$

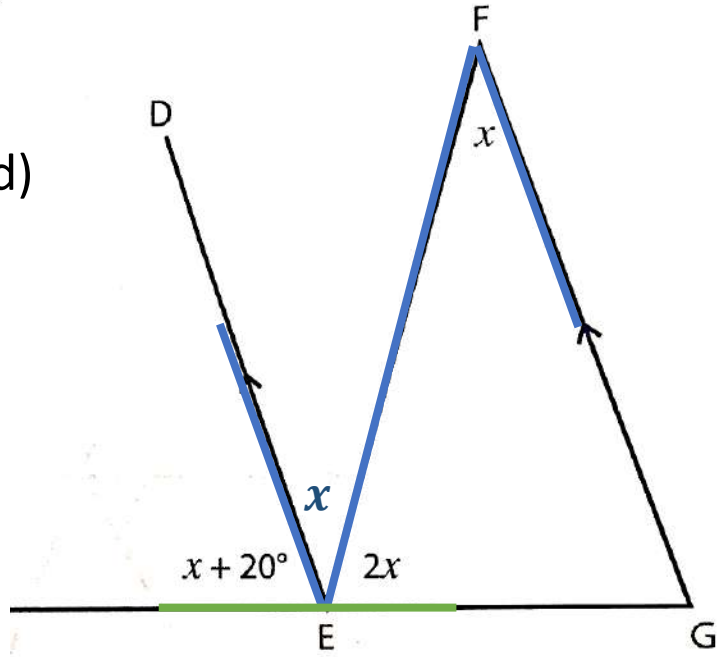
$30° + 80° + 2x = 180°$ $\quad \angle's\ in\ a\ \Delta$

$2x = 180° - 30° - 80°$

$2x = 70°$

$x = 35°$

d)



$D\hat{E}F = x$ $\quad Alt\ \angle's =; AB \parallel DC$

$x + 20° + x + 2x = 180°$ $\quad \angle's\ on\ a\ str\ line$

$4x + 20° = 180°$

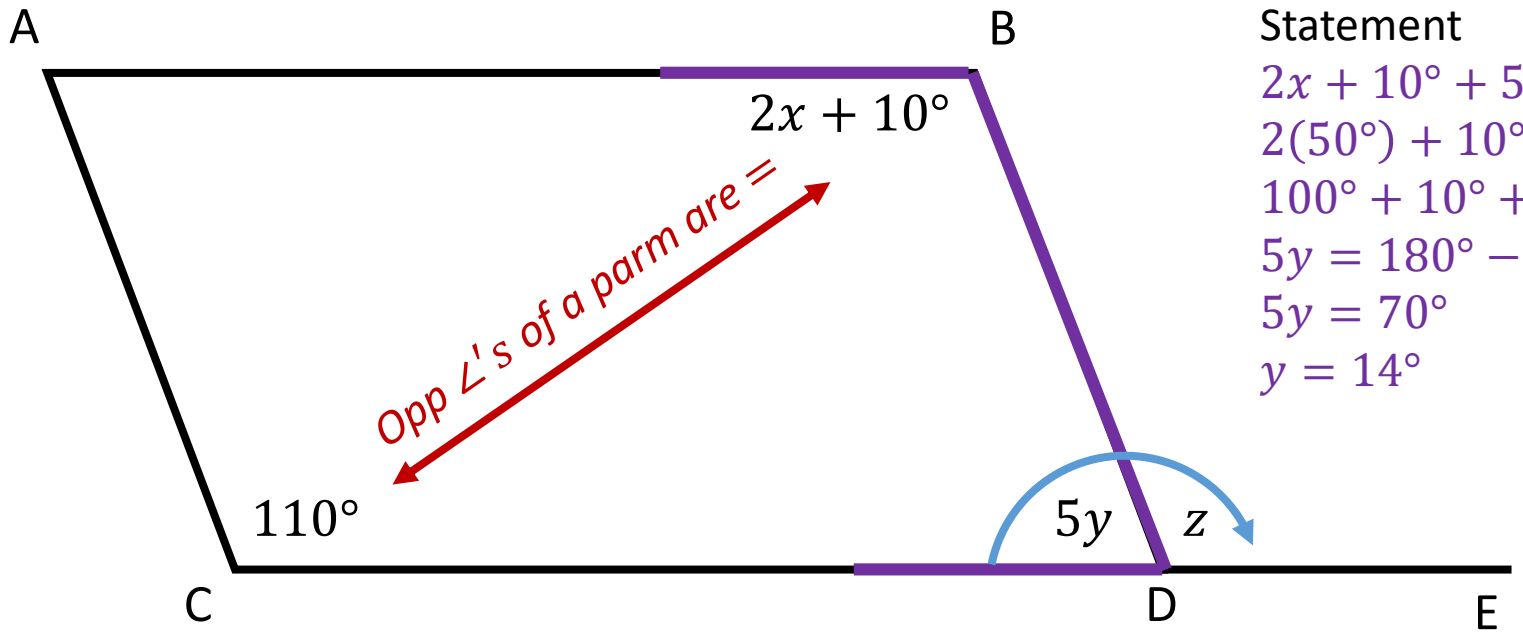
$4x = 180° - 20°$

$4x = 160°$

$x = 40°$

EXERCISE 10.3 Pg. 95

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



Statement	Reason
$2x + 10° + 5y = 180°$	$Co - int\ \angle' s\ Supp; AB \parallel CD$
$2(50°) + 10° + 5y = 180°$	
$100° + 10° + 5y = 180°$	
$5y = 180° - 100° - 10°$	
$5y = 70°$	
$y = 14°$	

Statement	Reason
$2x + 10° = 110°$	$Opp\ \angle' s\ of\ a\ parm\ are =$
$2x = 110° - 10°$	
$2x = 100°$	
$x = 50°$	

Statement	Reason
$5y + z = 180°$	$\angle' s\ on\ a\ str\ line$
$5(14°) + z = 180°$	
$70° + z = 180°$	
$z = 180° - 70°$	
$z = 110°$	

GEOMETRY OF STRAIGHT LINES

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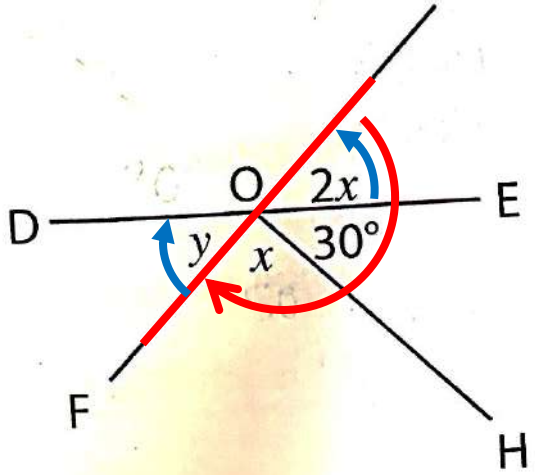
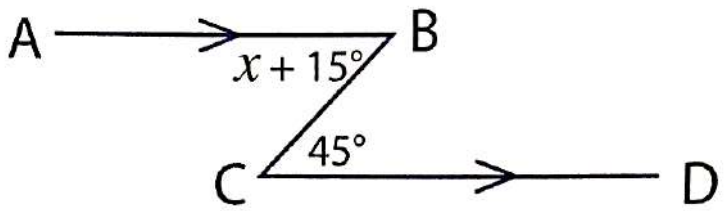
REVISION EXERCISE Pg. 97 (No.1e-h, 2a-b)

e)



Statement	Reason
$2x + 30° + x = 180°$	$\angle's\ on\ a\ str\ line$
$3x = 180° - 30°$	
$3x = 150°$	
$x = 50°$	
$y = 2x$	$Vert\ Opp\ \angle's =$
$y = 2(50°)$	
$y = 100°$	

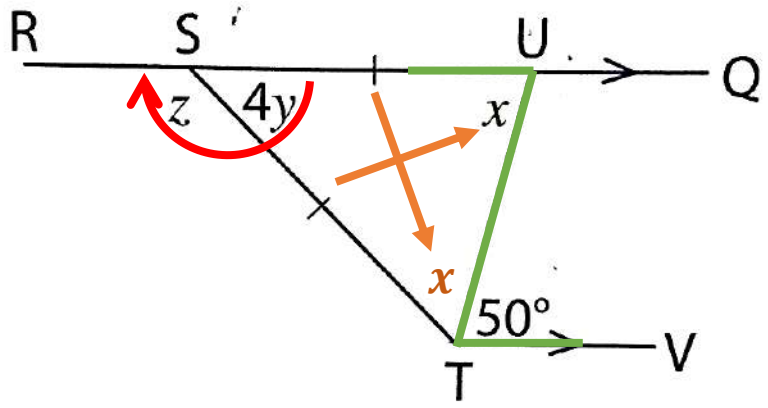
f)



$x + 15° = 45°$	$Alt\angle's =; AB \parallel CD$
$x = 45° - 15°$	
$x = 30°$	

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

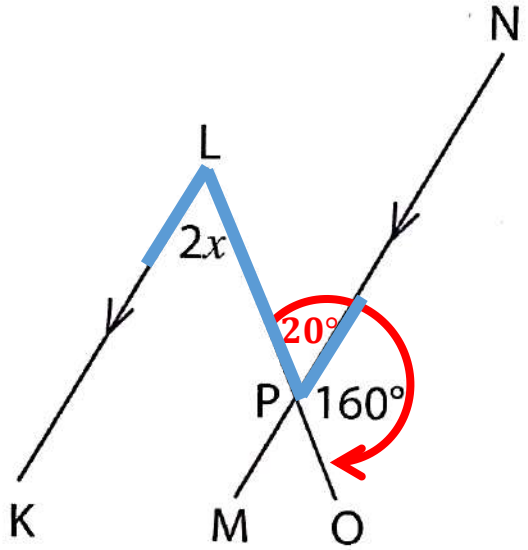
g) SU = ST



Statement	Reason
$x = 50°$	$Alt\angle's =; RQ \parallel TV$
$S\hat{T}U = x = 50°$	$\angle's\ opp = sides$
$4y + x + x = 180°$	$\angle's\ in\ a\ \Delta$
$4y + (50°) + (50°) = 180$	
$4y + 100° = 180°$	
$4y = 180° - 100°$	
$4y = 80°$	
$y = 20°$	
$z + 4y = 180°$	$\angle's\ on\ a\ str\ line$
$z + 4(20°) = 180°$	
$z + 80° = 180°$	
$z = 180° - 80°$	
$z = 100°$	

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

h)

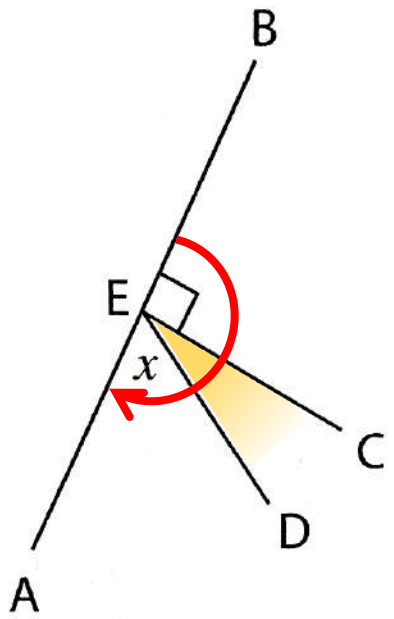


Statement	Reason
$L\hat{P}N + 160° = 180°$	$\angle's\ on\ a\ str\ line$
$L\hat{P}N = 180° - 160°$	
$L\hat{P}N = 20°$	
$2x = 20°$	$Alt\angle's =; KL \parallel MN$
$x = 10°$	

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

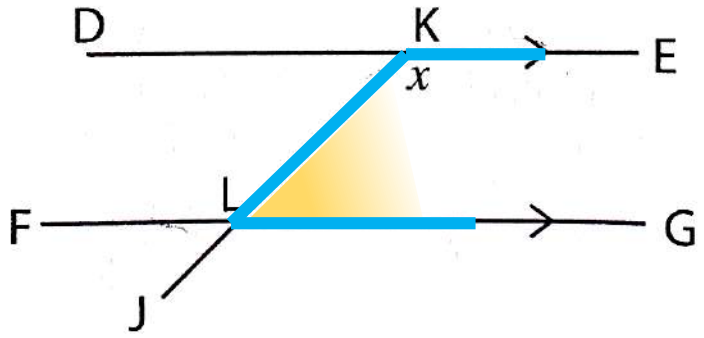
2. Express each of the following in terms of x, reasons for all your statements.

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



Statement	Reason
$x + D\hat{E}C + 90° = 180°$	$\angle' s\ on\ a\ str\ line$
$D\hat{E}C = 180° - 90° - x$	
$D\hat{E}C = 90° - x$	

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



$G\hat{L}K + x = 180°$	$Co - int\ \angle' s\ =; DE \parallel FG$
$G\hat{L}K = 180° - x$	