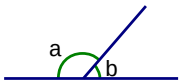
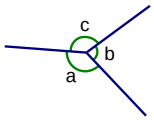
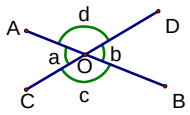
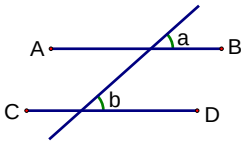
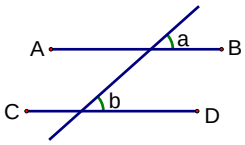
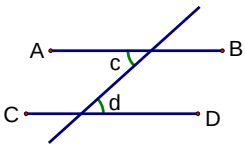
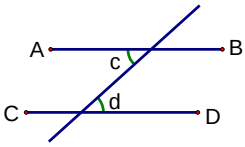
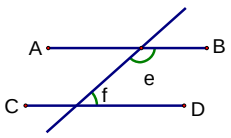
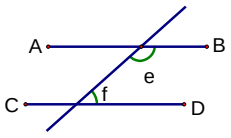
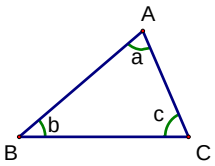
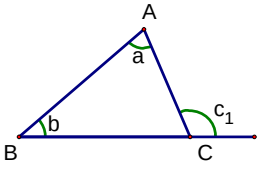
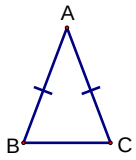
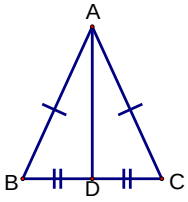
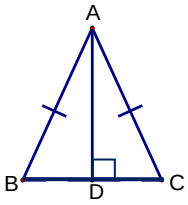
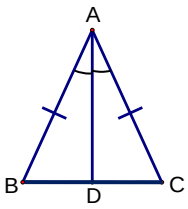
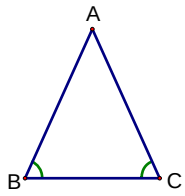
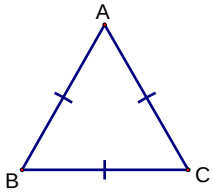
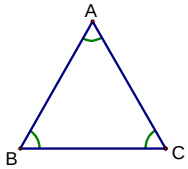
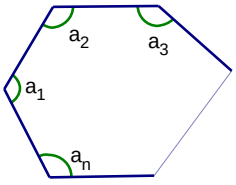
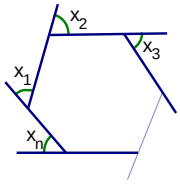
ABBREVIATION USED IN DEDUCTIVE GEOMETRY

A. Properties of Plane Geometry

No.	Diagram	Given Condition	Conclusion	Abbreviation
1		a and b are adjacent angles on a straight line	$a+b=180°$	adj. ∠s on st. line
2		a, b and c are angles at a point	$a+b+c=360°$	∠s at a pt.
3		Two straight lines AB and CD interest at point O	$a=b$ and $c=d$	vert. opp. ∠s
4(i)		AB // CD	$a=b$	corr. ∠s, AB // CD
4(ii)		$a=b$	AB // CD	corr. ∠s equal
5(i)		AB // CD	$c=d$	alt. ∠s, AB // CD
5(ii)		$c=d$	AB // CD	alt. ∠s equal
6(i)		AB // CD	$e+f=180°$	int. ∠s, AB // CD
6(ii)		$e+f=180°$	AB // CD	int. ∠s supp.
7		ABC is a Δ	$a+b=c=180°$	∠ sum of Δ
8		ABC is a Δ	$c_1=a+b$	ext. ∠ of Δ

No.	Diagram	Given Condition	Conclusion	Abbreviation
9		$AB = AC$	$\angle B = \angle C$	base ∠s, isos. Δ
10a		$AB = AC$ and $BD = DC$	$\angle BAD = \angle CAD$ and $AD \perp BC$	prop. of isos. Δ
10b		$AB = AC$ and $AD \perp BC$	$BD = CD$ and $\angle BAD = \angle CAD$	prop. of isos. Δ
10c		$AB = AC$ and $\angle BAD = \angle CAD$	$AD \perp BC$ and $BD = CD$	prop. of isos. Δ
11		$\angle B = \angle C$	$AB = AC$	sides opp. equal ∠s
12		$AB = BC = AC$	$\angle A = \angle B = \angle C = 60^o$	prop. of equil. Δ
13		$\angle A = \angle B = \angle C$	$BC = AC = AB$	prop. of equil. Δ
14		$a_1, a_2, a_3, \ldots a_n$ are the interior angles of a n-sided convex polygon	$a_1 + a_2 + a_3 + ... + a_n$ $= (n-2) \times 180°$	∠ sum of polygon
15		The sides of an n-sided convex polygon are produced in order.	$x_1 + x_2 + x_3 + ... + x_n = 360°$	sum of ext. ∠s of polygon

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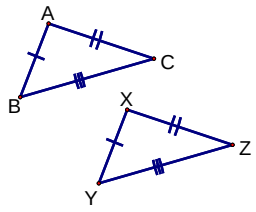
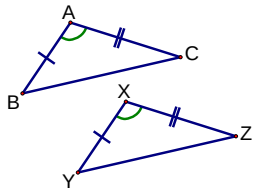
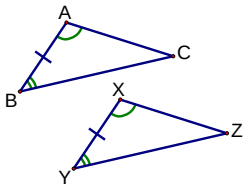
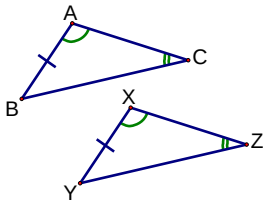
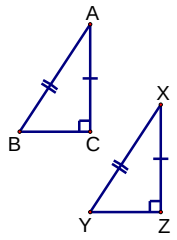
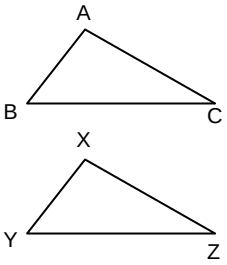
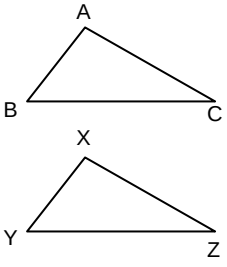
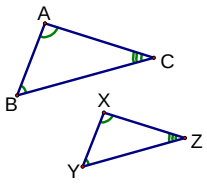
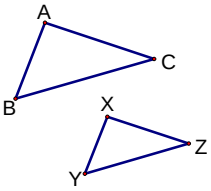
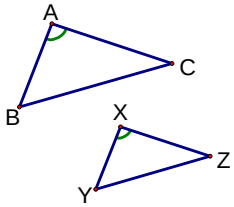
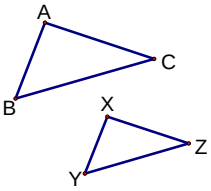
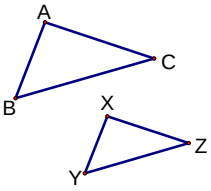
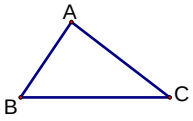
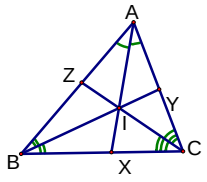
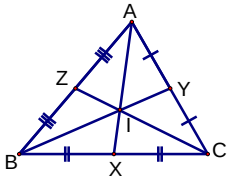
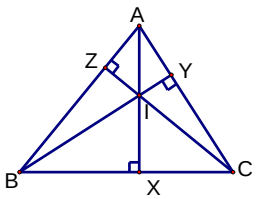
16		$AB = XY$ and $AC = XZ$ and $BC = YZ$	$\Delta ABC \cong \Delta XYZ$	S.S.S.
17		$AB = XY$ and $AC = XZ$ and $\angle A = \angle X$	$\Delta ABC \cong \Delta XYZ$	S.A.S.
18		$AB = XY$ and $\angle A = \angle X$ and $\angle B = \angle Y$	$\Delta ABC \cong \Delta XYZ$	A.S.A.
19		$AB = XY$ and $\angle A = \angle X$ and $\angle C = \angle Z$	$\Delta ABC \cong \Delta XYZ$	A.A.S.
20		$AB = XY$ and $AC = XZ$ and $\angle C = \angle Z = 90^o$	$\Delta ABC \cong \Delta XYZ$	R.H.S.
21		$\Delta ABC \cong \Delta XYZ$	$AB = XY$ and $AC = XZ$ and $BC = YZ$	corr. sides, $\cong \Delta$s
22		$\Delta ABC \cong \Delta XYZ$	$\angle A = \angle X$ and $\angle B = \angle Y$ and $\angle C = \angle Z$	corr. $\angle$s, $\cong \Delta$s

No.	Diagram	Given Condition	Conclusion	Abbreviation
23		$\angle A = \angle X$ and $\angle B = \angle Y$ and $\angle C = \angle Z$	$\Delta ABC \sim \Delta XYZ$	A.A.A.
24		$\frac{AB}{XY} = \frac{BC}{YZ} = \frac{CA}{ZX}$	$\Delta ABC \sim \Delta XYZ$	3 sides prop.
25		$\frac{AB}{XY} = \frac{AC}{XZ}$ and $\angle A = \angle X$	$\Delta ABC \sim \Delta XYZ$	ratio of 2 sides, inc. $\angle$
26		$\Delta ABC \sim \Delta XYZ$	$\frac{AB}{XY} = \frac{BC}{YZ} = \frac{CA}{ZX}$	corr. sides, ~Δs
27		$\Delta ABC \sim \Delta XYZ$	$\angle A = \angle X$ and $\angle B = \angle Y$ and $\angle C = \angle Z$	corr. $\angle$s, ~Δs
28		ABC is a Δ	$AB + BC > AC$ $BC + AC > AB$ $AB + AC > BC$	
29		I is the incentre of ΔABC	I is the intersection of the angle bisectors, i.e. $\angle BAX = \angle CAX$ $\angle ABY = \angle CBY$ $\angle BCZ = \angle ACZ$	incentre of Δ
30		I is the centroid of ΔABC	I is the intersection of the medians, i.e. $AZ = ZB$ $BX = XC$ $AY = YC$ $\frac{AI}{IX} = \frac{BI}{IY} = \frac{CI}{IZ} = \frac{2}{1}$	centroid of Δ
31		I is the orthocentre of ΔABC	I is the intersection of the altitudes, i.e. $AX \perp BC$ $BY \perp AC$ $CZ \perp AB$	orthocentre of Δ

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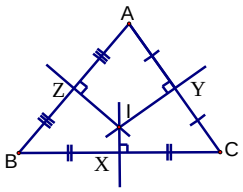
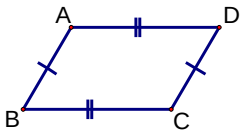
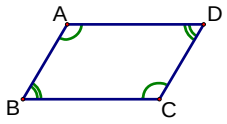
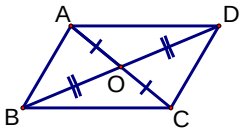
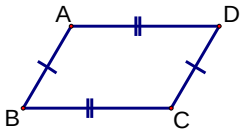
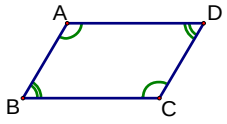
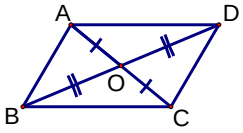
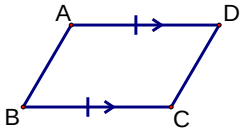
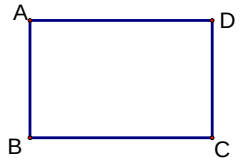
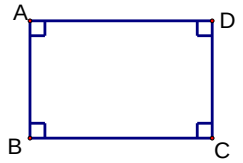
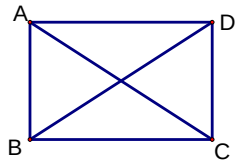
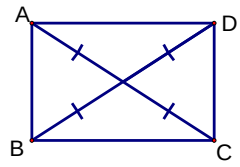
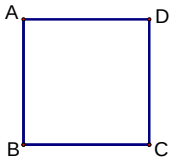
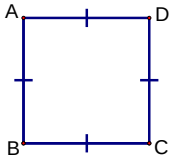
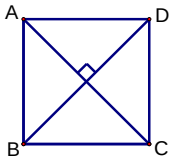
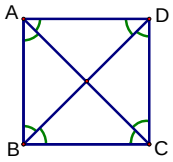
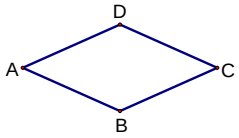
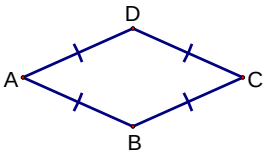
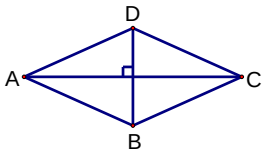
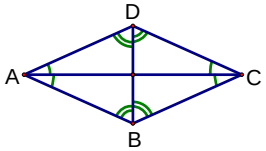
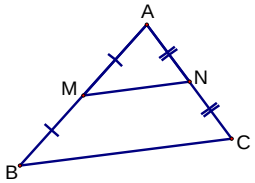
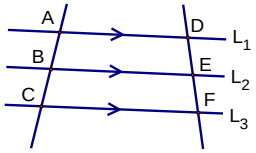
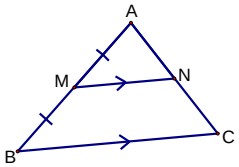
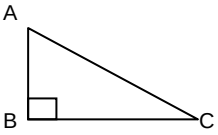
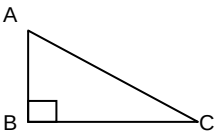
32		I is the circumcentre of ΔABC	I is the intersection of the perpendicular bisectors, i.e. $IX \perp BC$ and $BX = XC$ $IY \perp AC$ and $AY = YC$ $IZ \perp AB$ and $AZ = ZB$	circumcentre of Δ
33		$ABCD$ is a //gram	$AB = DC$ and $AD = BC$	opp. sides of //gram
34		$ABCD$ is a //gram	$\angle A = \angle C$ and $\angle B = \angle D$	opp. $\angle$s of //gram
35		$ABCD$ is a //gram and O is the intersection of diagonals	$AO = OC$ and $BO = OD$	diags. of //gram
36		$AB = DC$ and $AD = BC$	$ABCD$ is a //gram	opp. sides equal
37		$\angle A = \angle C$ and $\angle B = \angle D$	$ABCD$ is a //gram	opp. $\angle$s equal
38		$AO = OC$ and $BO = OD$	$ABCD$ is a //gram	diags. bisect each other
39		$AD = BC$ and AD // BC	$ABCD$ is a //gram	opp. sides equal and //
40		$ABCD$ is a rectangle	All properties of a //gram	prop. of rectangle
41		$ABCD$ is a rectangle	All the interior angles are right angles	
42		$ABCD$ is a rectangle	Diagonals are equal ($AC = BD$)	

No.	Diagram	Given Condition	Conclusion	Abbreviation
43		*ABCD* is a rectangle	Diagonals bisect each other into four equal parts	prop. of rectangle
44		*ABCD* is a square	All properties of a rectangle	prop. of square
45		*ABCD* is a square	All sides are equal	
46		*ABCD* is a square	Diagonals are perpendicular to each other	
47		*ABCD* is a square	Angles between each diagonal and a side is 45^o	
48		*ABCD* is a rhombus	All properties of a //gram	prop. of rhombus
49		*ABCD* is a rhombus	All sides are equal	
50		*ABCD* is a rhombus	Diagonals are perpendicular to each other	
51		*ABCD* is a rhombus	Interior angles are bisected by the diagonals	
52		$AM = MB$ and $AN = NC$	$MN \parallel BC$ and $MN = \frac{1}{2} BC$	mid-pt. thm.

No.	Diagram	Given Condition	Conclusion	Abbreviation
53		$L_1 // L_2 // L_3$ and $AB = BC$	$DE = EF$	intercept thm.
54		$AM = MB$ and $MN // BC$	$AN = NC$	intercept thm.
55		In ΔABC, $\angle ABC = 90°$	$AB^2 + BC^2 = AC^2$	Pyth. thm.
56		In ΔABC, $AB^2 + BC^2 = AC^2$	$\angle ABC = 90°$	converse of Pyth. thm.