

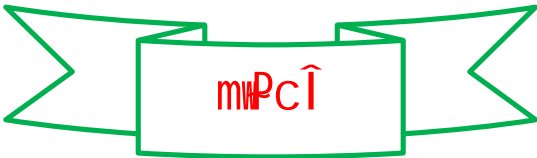
চক্রে
R' vngwZ Abkxj b

গণনা কন&Avj g

tj L†Ki K_v

R'vngwZ MwYZ wel†qi GKwU iazpY©Ask| GUV e'envwiK welq| i ay eB cto
R'vngwZi cYAvb ARB Kiv mae bq| c0qvRb Dchy³ Abjxj b| c0_g t_tK cÂg tk0Y
chšl cv'eBmg†n AZ'sl my` i fvte c0_wgK R'vngwZK avi Yv, tj v eYBv Kiv ntqtQ| G
m†Zil wKQzRwUj fvlv l wP†Î i Rb` K†qKwU welq wkÿv_x† i woku KwVb g†b nq| GB
Abjxj b eB†q tmB mKj welq l wP††K Avi l mnRfvte Dc`vc†bi tPÓv Kiv ntqtQ|
c0qvRbxq tÿ†Î BstiwR cwii fwl K kã e'envi Kiv ntqtQ hv wkÿv_x†K D'PZi avi Yv
MV†b AvZvek†mx Ki†el GUV KL†bvB cv'eB†qi weKí bq eis cv'eB fvj fvte
e†S†Z wkÿv_x† i mnvqZv Ki†el KwV†b`i w`K we†ePbv K†i cv'eB†qi µg me†ÿ†Î
AbmiY K&v mae nqwb| GwU GKwU Abjxj b eB Kv†RB GLv†b chvß Abjxj †bi
e'e`v ivLv ntqtQ| Dchy³ tÿ†Î ev`le wP† e'envi Kiv ntqtQ| RwUj Zv wbi m†b
msÁv†K Gwotq avi Yv†K gReZ Kivi tPÓv Kiv ntqtQ| wkÿv_x† i R'vngwZ wkL†b
wKQ†w Kv†R Avm†j c†_wgK R'vngwZ Abjxj b eBwUj Av†qvRb mdj n†el

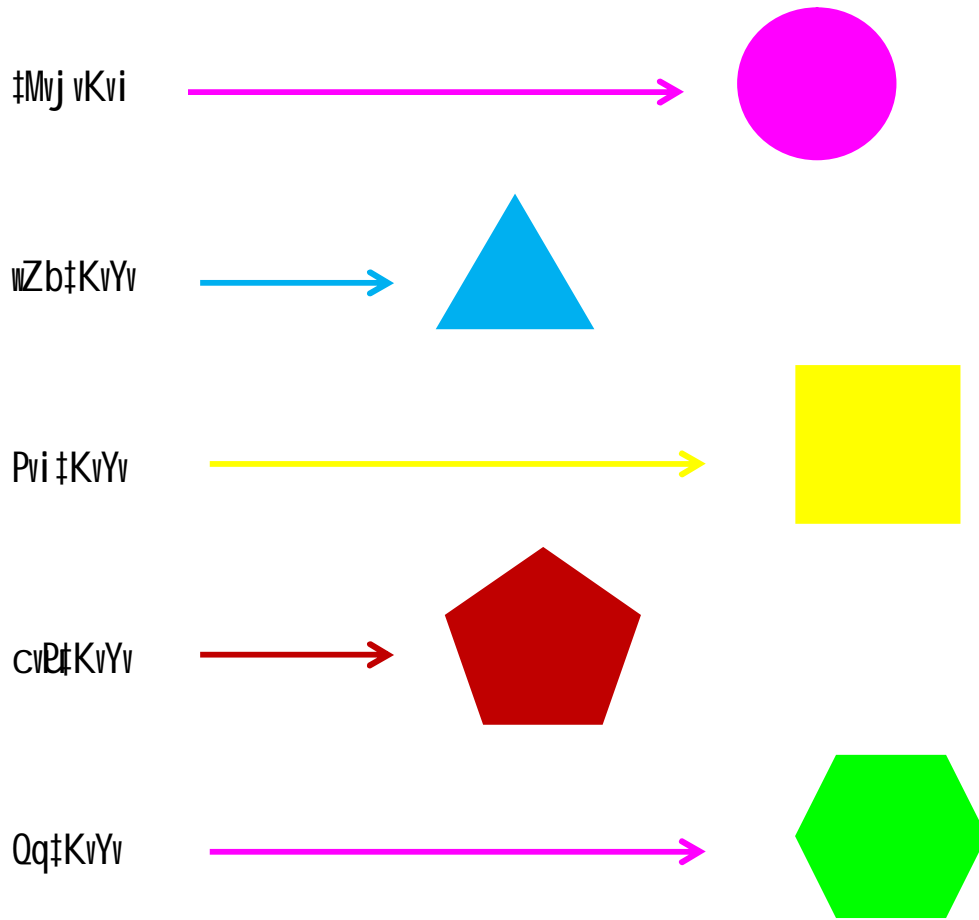
g†v=§ kvn&Avj g
BYU†±i
Dc†Rj v wi †mvm†mUvi
ivR`j x, iv½gwwU cveZ††Rj v



| μwgK bs | welq | côv baf |
|---------|--------------------------------|---------|
| 01 | AvKwZ. | 04 - 06 |
| 02 | wè`y | 07 |
| 03 | tiLv | 08 |
| 04 | iwk | 09 |
| 05 | †KvY | 10 - 15 |
| 06 | j ^α | 15 |
| 07 | mgvšivj tiLv | 16 |
| 08 | Zj | 17 - 18 |
| 09 | wl fR | 19 - 21 |
| 10 | PZfR | 22 - 25 |
| 11 | eE | 26 - 28 |
| 12 | Nbe` | 29 - 32 |
| 13 | R`wgvZ et· i wwfboAsk l e`envi | 33 -34 |
| 14 | mgvavb | 35 |

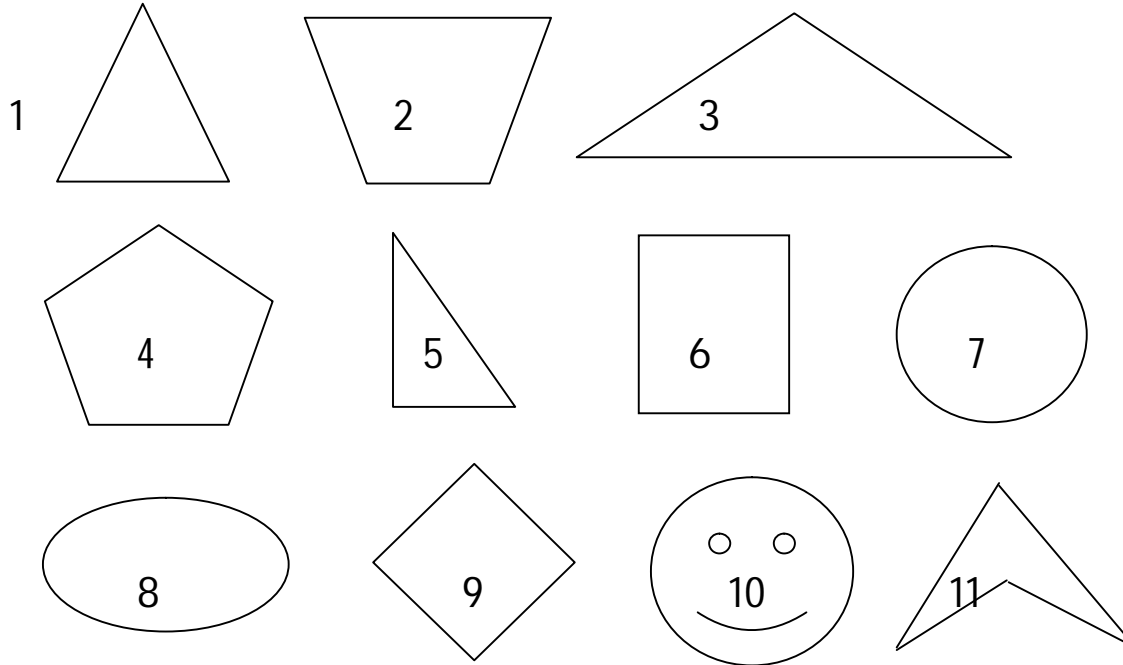
AvKwZ. (Shapes)

Avgt` i Pvicvfk A†bKiKg wRlomb Av†Q| me wRlomb wK GKB iKg? bv Zv Aek`B bq| covi tUvej , N†i i tg†S, Avj gwii , wUwf, j`vcUc BZ`w` Pvi†KvYv| Avevi A†b†Ki N†i wZb†KvYv wRlomb Av†Q| tgvevBj tcv†bi Uvlqvi tLqvj Ki†j t`L†Z cv†ev Zvi g†a` AmsL` wZb†KvYv †jvnvi KvV†gv Av†Q| Lvevi tcb, tcqvjv, wcviiP, evwU Gm†ei g†a` †Kvb †KvY †bB| G,†jv tMvjvKvi | Avgiv mKv†j g†tqi nv†Zi %Zwi iawU w`†q bv`† Kwi tm iawU tMvjvKvi |



Avgi v Avgt† i cÖg cv†V Abkxj bÑ1 Gi wPÎ ,tjv t_†K wZb†KvYv, Pvi†KvYv, I †Mvj vKvi
wPÎ evQvB Ki†ev| KZb†† wPÎwU wZb†KvYv, KZb†† wPÎwU Pvi†KvYv ev KZb†† wPÎwU
†Mvj vKvi Zv e†. wj †L i wL | Gevi mgvav†bi mv†_ wgwj †q †bB | hw` mgvav†bi mv†_ bv wgtj
Z†e cbivq †Pöv Kw |

AvKwZ. Abkxj b- 1



| AvKwZ. | wPî i msL'v |
|-----------|-------------|
| Pvi ‡KvYv | |
| wZb‡KvYv | |
| ‡Mvj vKvi | |

Gevi GKBFvte Ablyxj b- 2 Gi Qme ntZ wZb‡KvYv, Pvi ‡KvYv I ‡Mvj vKvi e' t'jv evQvB Kwi Ges Av‡Mi gZ Qme i msL'v wbtPi e' wj vL | mgvat‡bi mv‡_ wgvj tq ‡bB | mwK bvntj cbivq ‡Póv Kwi |

AvKwZ. Ablyxj b - 2

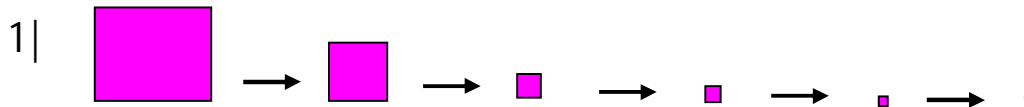


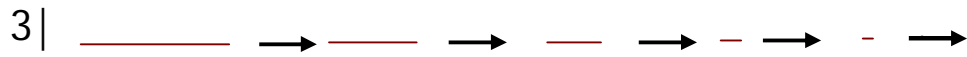
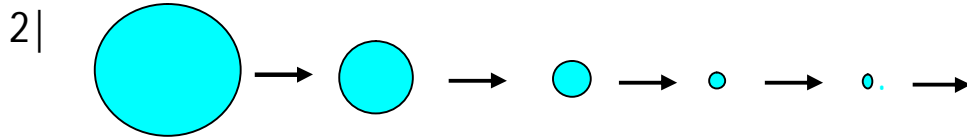


| AvKwZ. | QweimsL'v |
|-----------|-----------|
| Pvi tKvYv | |
| wZbtKvYv | |
| tMvj vKvi | |

we`x(Point)

Avgiv tKvb e`tK tKtU ev tft½ tQvU tQvU KiZ cwi | G KvR evievi KiZ _vKtj GK mgq t`Lv hvte Avi tQvU Kiv hv"Q bv | GKBFvte tKvb wPÎtKI tQvU KiZ cwi | tcbwtj AvKiv wPÎtK BtiRvi w`tq gto gto tQvU KiZ cwi | wPÎwUtk tQvU KiZ KiZ Ggb GK chq tcstQ hvq th Avi tQvU Kiv m`e bv | ZvQrov Kjg ev tcbwtj i m² gly w`tq KvMtr tQvq jvMwtj th tQvE tduv cto ZvtK Avi tQvU Kiv hvqbv | Gme tQvE tQvE tduvK R`wgvZi fvlvq we`yejtZ cwi | Avgiv wZbwU wPÎtK tQvU t`tK tQvU ntZ t`Ltev-





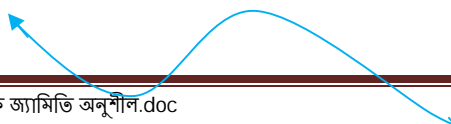
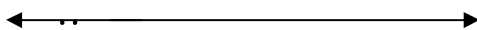
1,2,3 bs \sqrt{r} i me \sqrt{r} kl m^2 tduvB we \sqrt{r} y

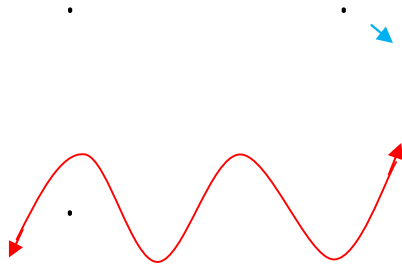
(ev \sqrt{r} fe we \sqrt{r} yAv \sqrt{r} klv m \sqrt{r} e bv, Avgiv we \sqrt{r} yov \sqrt{r} tg hv Av \sqrt{r} kl Zv we \sqrt{r} y c \sqrt{r} o \sqrt{r} ifc ev we \sqrt{r} y gZ)
 Avgiv Avevi we \sqrt{r} yK vb \sqrt{r} Pi gZ K \sqrt{r} i ej \sqrt{r} Z cwi -
 th R \sqrt{r} wgv \sqrt{r} ZK vP \sqrt{r} i i %N \sqrt{r} c \sqrt{r} OI D \sqrt{r} PZv tbB i agv \sqrt{r} Ae \sqrt{r} vb Av \sqrt{r} Q Zv we \sqrt{r} y
 GUv \sqrt{r} K Avi I tQvU K \sqrt{r} i ej v hvq-
 th R \sqrt{r} wgv \sqrt{r} ZK vP \sqrt{r} i i %N \sqrt{r} c \sqrt{r} tbB wK \sqrt{r} S' Ae \sqrt{r} vb Av \sqrt{r} Q Zv we \sqrt{r} y
 (%N \sqrt{r} c \sqrt{r} v \sqrt{r} K \sqrt{r} i c \sqrt{r} OI D \sqrt{r} PZv v \sqrt{r} K \sqrt{r} Z cv \sqrt{r} i bv)

tiLv (Lines)

Avgiv we \sqrt{r} ym \sqrt{r} u \sqrt{r} tK Av \sqrt{r} M tR \sqrt{r} tbwQ | LvZvq `BvU we \sqrt{r} yG \sqrt{r} tK thvM Ki \sqrt{r} tj tiLv %Zwi nq |
 (Av \sqrt{r} mtj tiLv mv \sqrt{r} gtb tc \sqrt{r} Qtb Amxg ch \sqrt{r} we \sqrt{r} Z \sqrt{r} v \sqrt{r} K | Avgiv LvZvq tiLvi c \sqrt{r} o \sqrt{r} ifc Av \sqrt{r} kl \sqrt{r} Z
 cwi)

..

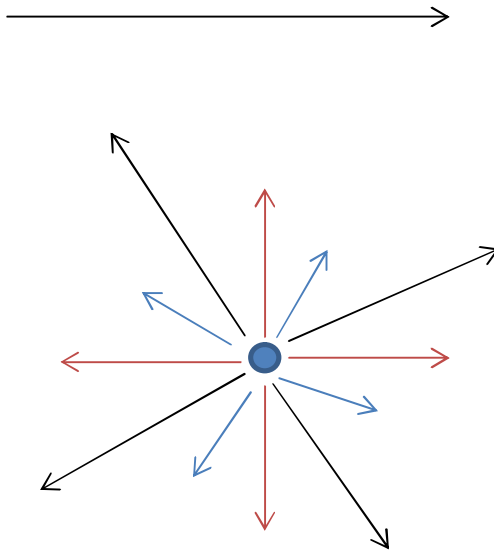




Avgiv Dctii wPÎ t`LİZ tcjvg` Bw ve` jK wefbaet_ thM Kiv hvq| Gigta` cÖg wPÎ
 tKej tmvRmYR thM Kiv ntqtQ| tmvRmYR thM Kivi KviY cÖg wPÎU mijtiLv Ges
 evKx wPÎ ,tjvtZ ve` y Bw eµct_ ev evKvct_ thM Kiv ntqtQ etj tiLv ,tjv eµtiLv|
 mijtiLvi Ask mijtiLvsk | AtbK mgq i agvî tiLvsk etj B mijtiLvsk esvbtv nq|

iwk¥ (Ray)

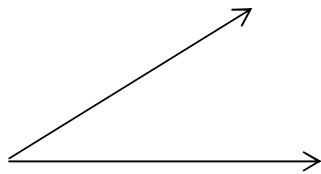
Avgiv mijtiLv mµtKQRtbwQ hvi `BcÖÍ Amxg chÖ ve` Z. _vtK| iwki tytÎ `BcÖÍ
 Amxg bq A_v©GKcÖÍ Amxg Ab` cÖÍ mmxg ev mxgve× | mmxg cÖÍ bvg Drm| iwkwU
 Drm t_tK tei ntq GtmtQ etj gtb nq|



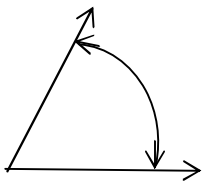
ivZitejv Avtj vKZ e`vZK emZi w`tK etRv etRv `wotZ ZvKvtj t`Ltz cve AtbK
 Avtj vKtiLv emZwU t`tK tei ntq Pviw`tK Qvotq tMtQ| ZvB Avgiv Avtj vKtiLv ,tj vtK
 Avtj vKivk`etj _vK| P>`a mth`tyt` GKB NUbv NtU|

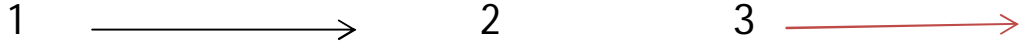
Angle (Angle)

`BvU iKvfi GKB Drm _vKtj Acic`BvU wfbgk ntj tKvY ^Zwi nq| Ab`fvte ej tj
 `BvU mij tLvsK tK GKc`Ave x | Ab`c`tLvjv ivLtj tKvY %Zwi nq| th ve`tz tKvY
 ^Zwi nq Zvi bvg tK`vYK ve`y



tKvtYi tLvj vgly hZ Qovtbv tmU ZZ eo tKvY| tKvtYi tLvj vgly hZ Kg Qovtbv tmU ZZ
 tQvU tKvY| tKvtYi gvb tLvs`ki `N`Dci wbf`Kti bv| wPt` c`Q tKvYvU eo Kvi Y
 tLvj vgly t`nk Qovtbv Ges wZxq tKvYvU tQvU Kvi Y tLvj vgly Kg Qovtbv| wZxq tKvYvU
 mij tLvs`ki `N`v`nk nl qv mtZ`I i ayLvj vgly Kg Qovtbv etj tQvU tKvY|





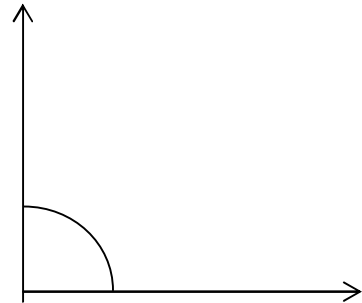
mgvart̄bi mt̄½ w̄ḡwj t̄q t̄bB | mgm̄v̄ ḡtb n̄t̄j c̄b̄iv̄q t̄P̄óv̄ Kw̄i |

†KvY Abkxj b - 2

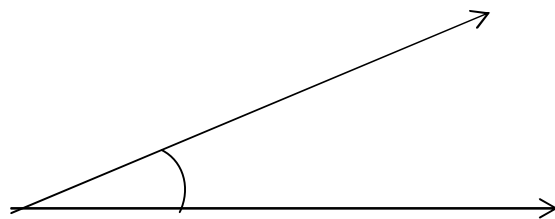
Gevi P̄úvi m̄v̄n̄v̄t̄h̄ 30,45,60,90,120 w̄w̄M̄ÖKvY Aw̄k Ges GKBFv̄t̄e mgvart̄bi mt̄½ w̄ḡj Kw̄i |

K†qKvU cwi w̄PZ †KvY

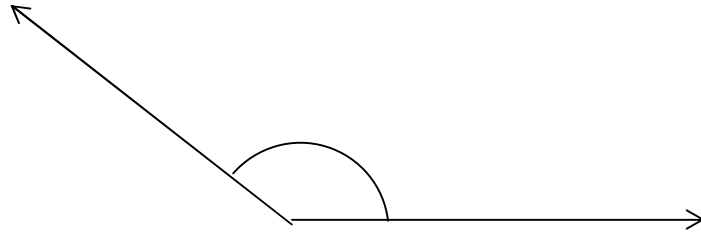
mg†KvY (Right Angle): 90° (w̄w̄M̄Ö) Gi mgvb †KvY mg†KvY |



m²†KvY (Acute Angle): 90° (w̄w̄M̄Ö) Gi t̄P̄t̄q t̄QvU †KvY m²†KvY |

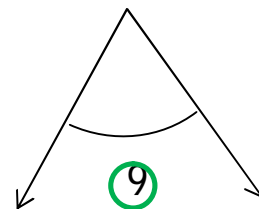
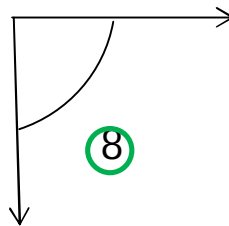
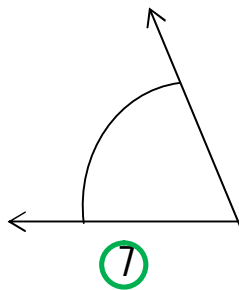
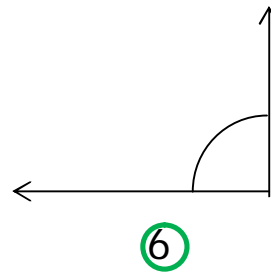
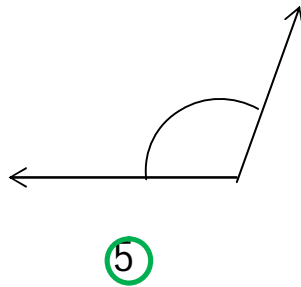
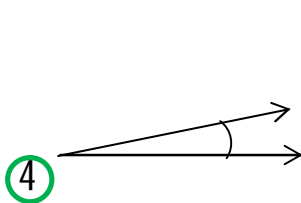
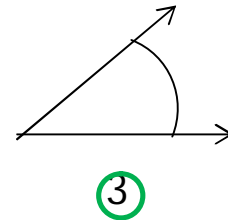
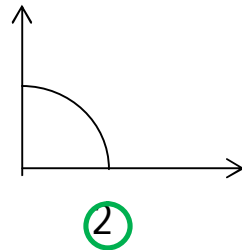
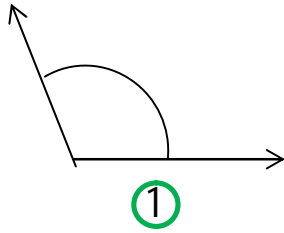


~†KvY (Obtuse Angle): 90° (w̄w̄M̄Ö) Gi t̄P̄t̄q eo w̄KŠ' 180° (w̄w̄M̄Ö) Gi t̄P̄t̄q t̄QvU †KvY ~†KvY |

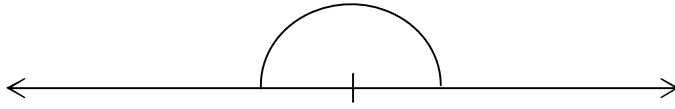


ত্রিকোণ পরিমাপ - 3

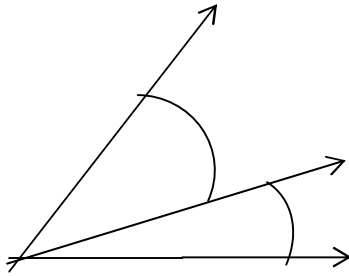
নিচের পটভূমিতে ত্রিকোণের কোণ পরিমাপ করুন।



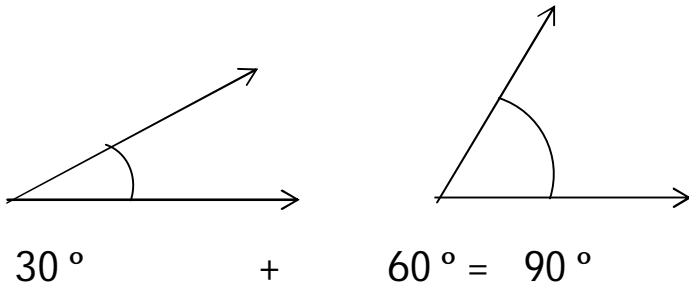
মিঃ ত্রিকোণ (Straight Angle): ` ঙ্গ ত্রিকোণ এর 180°Gi মগ্ব ত্রিকোণB মিঃ ত্রিকোণ |



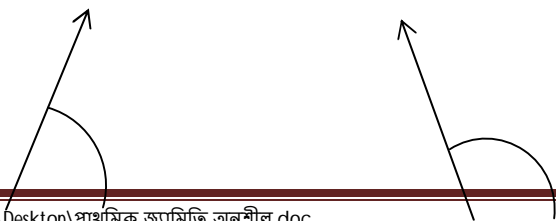
মিলব্রুঃ ত্রিকোণ (Adjacent Angle): ` ঙ্গ ত্রিকোণGi KKB ত্রিকোণK we` yI GKmU মববি Y i নক্ ev evû `vKtj ত্রিকোণ ` ঙ্গU মিলব্রুঃ ত্রিকোণ |



চিঃ ত্রিকোণ (Complementary Angle): ` ঙ্গ ত্রিকোণGi মবি gvtci thvMdj 90 mWMÖ ev GK মগ্ ত্রিকোণ নtj Zviv ci `úi চিঃ ত্রিকোণ |



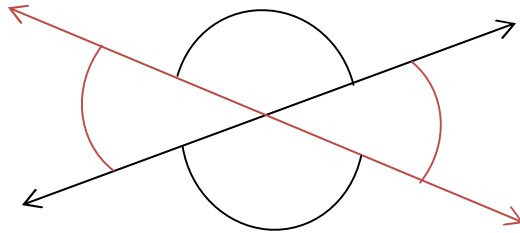
মঃ উঃ ত্রিকোণ (Supplementary Angle): ` ঙ্গ ত্রিকোণGi মবি gvtci thvMdj 180 mWMÖ ev ` ঙ্গ মগ্ ত্রিকোণGi মগ্ব নtj ত্রিকোণ ` ঙ্গU চি `úi মঃ উঃ ত্রিকোণ |



$$\begin{array}{c} \longrightarrow \\ 70^\circ \end{array} + \begin{array}{c} \longrightarrow \\ 110^\circ \end{array} = 180^\circ$$

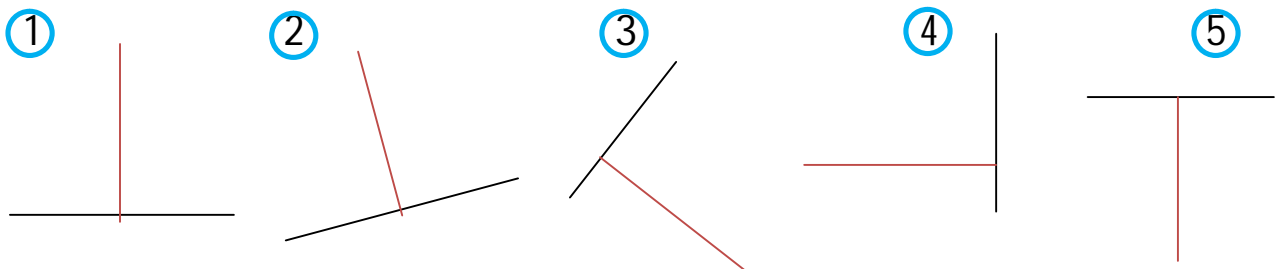
(চিহ্নিতকৃত I মণ্ডিতকৃত মিলবে তক্রয়I নতZ চিত্তি)

বিকটকৃত (Vertically Opposite Angle): দুই মিত্তিLv চিহ্নিত কিত্তি তে
 যে তZ পবিত্ত তক্রয় ড্রবচে | তমLvb বিকিত্ত তক্রয় ত্রব GKW Ab'WUi বিকটকৃত Ges
 Giv cwi g'Y m'v |



জম্ব (Perpendicular)

GKW মিত্তিLvi Dci Ab' GKW মিত্তিLv Ggbfvte ত্তম তK thb মিত্তিLv t'q w'tR' i
 g'ta' m'g'K'Y (90 WMM) Drcb' | Gi Kg Ae'q মিত্তিLv GKW Ab'WUi Dci
 জম্ব GKW তK জম্ব ত্ত Ab'W'K f'g' ej'Z nte |



Dctii 5W W'P'Î c'Z' KW মিত্তিLv GKW Ab'WUi Dci জম্ব

Dj α (Vertical)

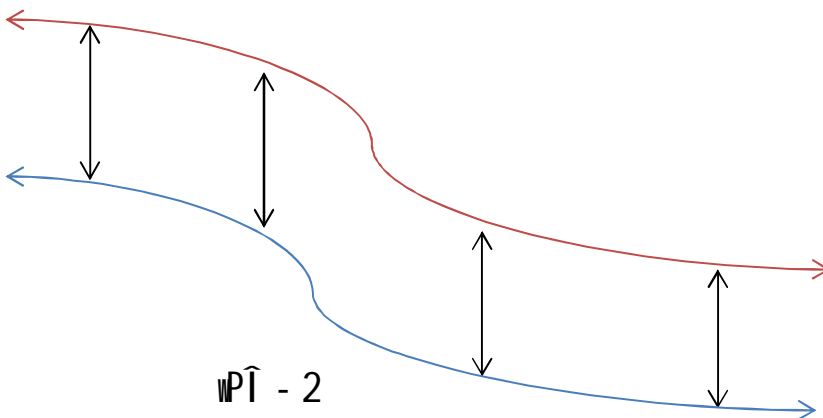
$c_{\perp} \text{lexi } c_{\hat{p}} \text{ tMvj vKvi ntj | } \ddot{y}z^a \ddot{y}z^a \text{ Ask mgZtj i gZ gtb nq | } Lw\hat{U}Z c_{\perp} \text{ex } c_{\hat{p}} \text{K mgZj}$
 $gtb Kti c_{\perp} \text{lexi fvg ev fvgi mgvš'vj tKvb ti Lvi Dci j } \alpha B \text{ nt}^{\circ} Q \text{ Dj } \alpha \uparrow \text{ Dcti i } 5w$
 $w\hat{P}\hat{T}i \text{ gta}^{\circ} \text{ meKq}w \text{ j t}^{\circ} \hat{P}\hat{T} \text{ ntj | } \text{Dj } \alpha \text{ nt}^{\circ} Q \text{ 1bs | 5bs } w\hat{P}\hat{T} \text{ | GfvteI ej v hvq } \acute{O} \text{ Dj } \alpha \wedge$
 $GK c\hat{Q}i \text{ j } \alpha \text{ hvi fvg } c_{\perp} \text{lexi fvgi (Earth) Gi mgvš'vj |}$

mgvš'vj ti Lv (Parallel Lines)

$\hat{B}w \text{ ti Lv cvkvcwk Ae}^{\circ} \text{vb Kti me mgq } w\hat{b}tR\hat{t}^{\circ} \text{ i gta}^{\circ} \text{ mgvb } \hat{i}Z \text{jeRvq ivL'tj ti Lv } \hat{B}w$
 $ci^{\circ} \text{ui mgvš'vj | cvkvcwk Ae}^{\circ} \text{Z ti Lv } \hat{B}w \text{ mij ti Lv ntj Zviv mgvš'vj mij ti Lv Avi}$
 $e\mu \text{ti Lv ntj mgvš'vi e}\mu \text{ti Lv |}$



$w\hat{P}\hat{T} - 1$



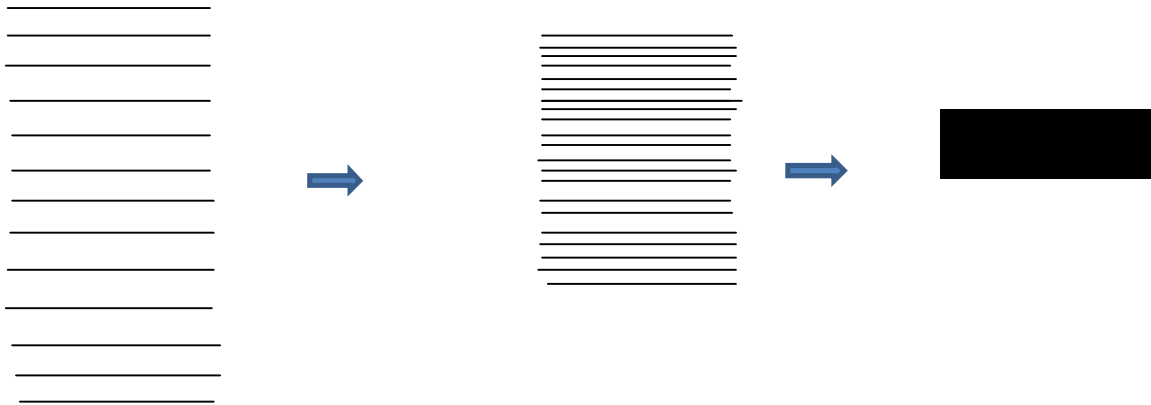
$w\hat{P}\hat{T} - 2$

1bs $w\hat{P}\hat{T}$ mgvš'vj mij ti Lv Ges 2bs $w\hat{P}\hat{T}$ mgvš'vj e}\mu \text{ti Lv}

gB I tijjvBtbi tQvU Ask mgvšlvj mijtiLvi D`vniY| eo tijjvBb I b`xi `g cvo mgvšlvj eμtiLvi D`vniY|

Zj (Surface)

AtbK_ztjv tiLv ci`úi vbKUeZx@I qvi wPÎ tLqvj Kwi :



wPÎ - mgZj



wPÎ - eμZj

wPÎ AtbK_ztjv mijtiLv KvτQ AvmτZ AvmτZ GτKevti wgtk wMtqtQ| GB wgtk hvI qv wPÎwU GKwU Zj | thτnZzmijtiLv w`τq ^Zwi nτqtQ ZvB GUvi bvg mgZj | GKbfvτe eμtiLv w`τq %Zwi wPÎwU eμZj | Avgvτ`i Pvicvτk thme e`bvovPvov KiτZ cwii ev aiτZ cwii GKUztLqvj Kiτj t`Lv hvτe Zvτ`i evBτii cvk nq mgZj bvnq eμZτj i gτZv| ZvB ZjτK Avgiv Ab`fvτe ejτZ cwii th me e`aiv hvq, bvovPvov Kiv hvq Zvτ`i Dcwii fMB Zj | (Dcwii fM gvτb Dcτii fM bq, Dcwii fM gvτb e`i evBτii cφ)

Zj Abkxj b

Avgiv KZ ,tj v Qwe t` Ltev| tKvbWtZ KqWU Zj AvtQ Ges Kx ai tYi Zj AvtQ Zv vPwY Z
Ki tev| fž n t j mgravb t` tL cbivq tPóv Kwi |

①



②



③



④



⑤

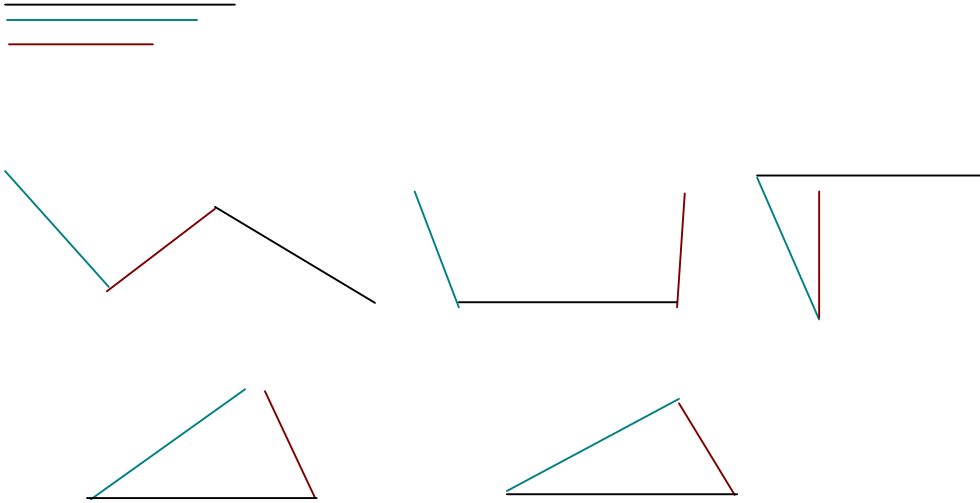


⑥



৷ fR (Triangle)

Avgiv mij ti Lvsk m^utK^oR^tb^oQ | mij ti Lvsk, ev^u ev fR GKB K_v | w^tP wZbW
 mij ti Lvsk ev ev^u tLqvj Kitev | mij ti Lvsk wZbW GKwJi c^oSⁱ m^t½ Ab^o, t^jvi c^oSⁱ
 newfb^ote j vM^tbv Av^tQ |

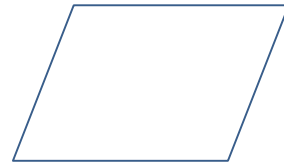
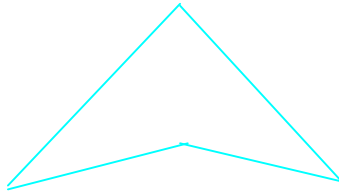
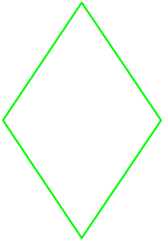
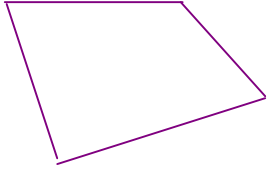


t^klW Qov evKx w^PTⁱ t^jv^tZ mij ti Lvsk t^jv GKwJi m^t½ Aciw Ggbfvte t^j t^Mt^o th c^og
 I t^kl c^oSⁱtLjv i^tq^tQ | t^kl w^PTⁱw^tZ me t^jv c^oSⁱAvUKv^tbv ev Ave^x | Avi t^kl w^PTⁱw^JB
 wⁱfR | Zvnt^j Avgiv ej t^Z cwⁱ o wⁱfR n^t°Q wZbW ev^u w^t t^q ^Zwi GKwJ Ave^x w^PT^o |
 G^tZ wZbW ev^u Ges wZbW t^Kv^Y v^tK |

GKBfvte newfb^oesL^oK ev^u w^t t^q Ave^x w^PTⁱ n^tZ cv^ti -

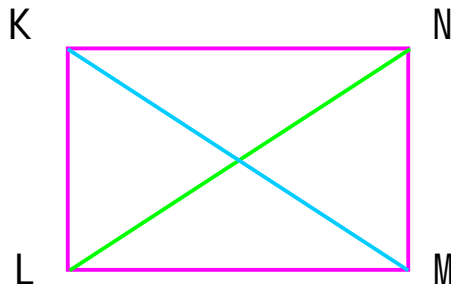
- P^riW ev^u ev fR w^t t^q Ave^x w^PTⁱ - PZ^tR
- c^oW ev^u ev fR w^t t^q Ave^x w^PTⁱ - c^AfR
- Q^oW ev^u ev fR w^t t^q Ave^x w^PTⁱ - IofR, BZ^owⁱ |

Avgi v AvtMB tRtbnQ PviwU evû ev fR w` tq Ave× wPÎ nt"Q PZzR|



Dctii me ,tj v wPÎ B PZzRi KviY Ave× wPÎ ,tj vi cD` tKi PviwU Kti evû AvtQ|

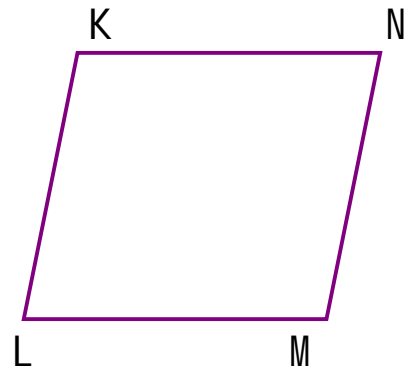
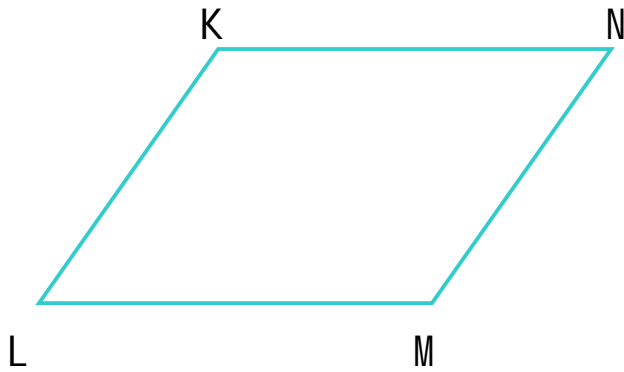
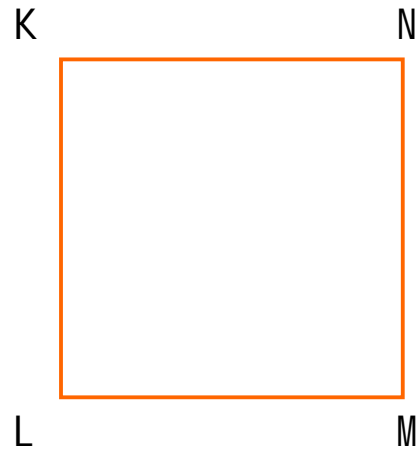
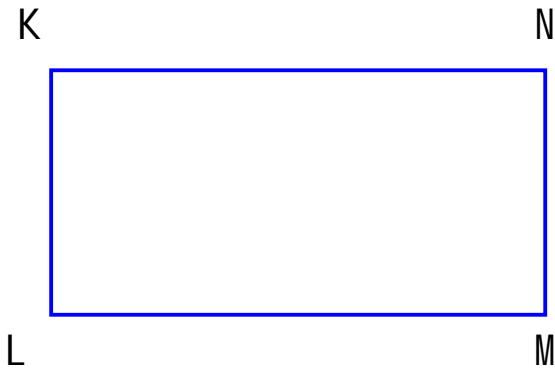
wbtpi PZzRi wecixZ tKSwYK we` y,tj v ti Lv w` tq thvM Kiv ntqtQ| GB ` BwU ti LvB KY©
 btg cwi wPZ|



KLMN PZzRi KM I LN ` BwU KY©

KtqKwU cwi wPZ PZzR :

মুগবশী K (Parallelogram) : PZfPRi weciXZ evû ci`úi mgvšÍvj | (mgvšÍi †Ki weciXZ evû mgvšÍvj ntj ci`úi mgvb ntq hvq)

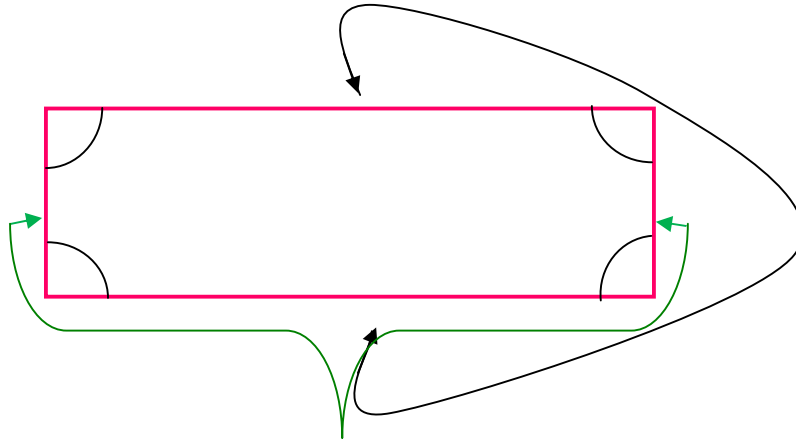


Dctii me,tjv PZfPRi mgvšÍi K KvY cÖ †KiB weciXZ evû ci`úi mgvšÍvj |

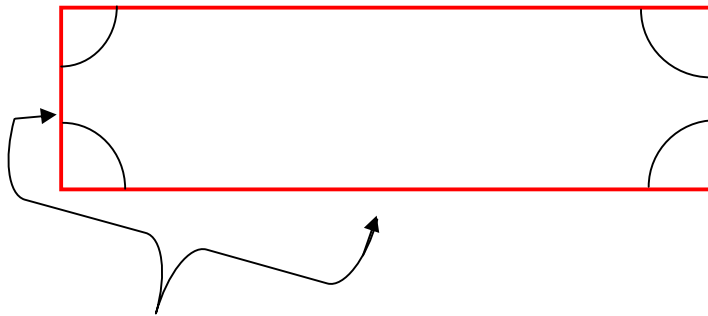
AvqZ (Rectangle): th PZfPRi (ev mgvšÍi †Ki) weciXZ evû0q ci`úi mgvb Ges †KvY,tjv mg†KvY |

A_ev

ত্রিভুজের মতো একটি আয়তক্ষেত্রের ক্ষেত্রফল $\frac{1}{2} \times \text{ভূমি} \times \text{উচ্চতা}$ ।

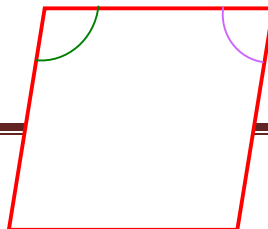


একটি আয়তক্ষেত্রের ক্ষেত্রফল $\text{দৈর্ঘ্য} \times \text{প্রস্থ}$ ।



একটি আয়তক্ষেত্রের ক্ষেত্রফল $\frac{1}{2} \times \text{দৈর্ঘ্য} \times \text{প্রস্থ}$ ।

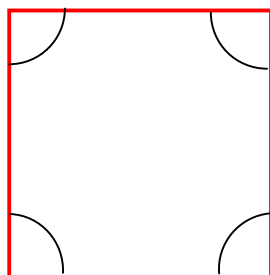
ত্রিভুজের মতো একটি আয়তক্ষেত্রের ক্ষেত্রফল $\frac{1}{2} \times \text{ভূমি} \times \text{উচ্চতা}$ ।





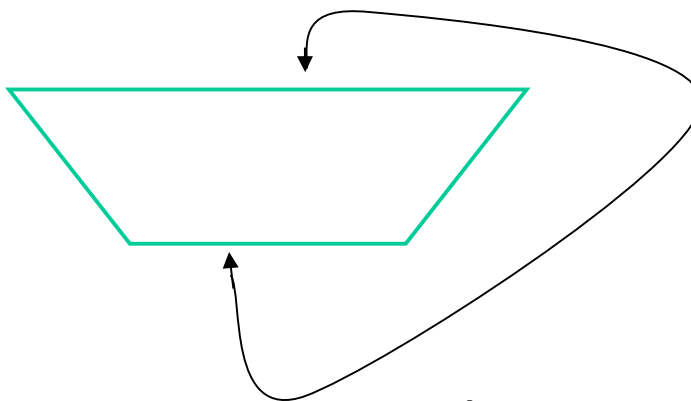
Dctii wPÎ PZZRi me,tjv evû ci`úi mgvb | i`mî wecixZ tKvY,tjv ci`úi mgvb
_v`K |

eM (Square) : th PZZRi c`Z`KwU evû mgvb Ges c`Z`KwU tKvY mg`KvY ZvB eM`



(AvqZ, i`mî, eM`c`Z`KwU tKvY mg`KvY c`Z`KwU wecixZ evû ci`úi mgvš`vj)

U`wcvRqvg (Trapezium) : th PZZRi GK`Rvov evû ci`úi mgvš`vj Ges Amgvb ZvB
U`wcvRqvg bv`g cwi wPZ |



U`wcvRqvgi GK`Rvov evû ci`úi mgvš`vj Ges Amgvb

eĒ (Circle)

Avgiv Avgv` i Pvi cv`k tMvj vKvi wefbaB`bm t`L`Z cvB | gv- tev`bi nv`Zi Pw, Lvevi
tcb, ewU, cvb cvb Kivi Mv, mvB`Kj ev Mvovi PvKv, gv`qi nv`Zi %Zwi i`wU BZ`w` |

GKwU Lvevi tclbK Av½tj i gv_vq ti±L fvi mgv" ivLvi tPóv Kwii | tLqvj Kwii thLvfb Av½tj
 ivL±j tclbU wKVvK Av½tj i gv_vq etm tmB RvqMwU tclbU G±Kevti gvSLvfb | GB
 gvSve`y_t±K tclbU mKj w`±Ki wKbvivi `i-Zj mgvb | Avi GB gvSve`y tclbU tK`ve`y
 wPÎ - 1 G tclbU ga`ve`y n±Z QqU mgvb PvgP wKbvivq mgvb `i-Zj m±ó K±i±Q Ges
 wKbvivU ga`ve`y n±Z me±q mgvb `i-Zj_v±K | wPÎ - 2 G wewfbo±oi mgvb %±N`±
 PvgP_tjv tMjvKvi wU c±_i m±ó K±i±Q | GLvfb Nwoi KvUvi ga`ve`y wPÎwU
 tK`±c±Z KwU PvgP G±KKwU e`vma±

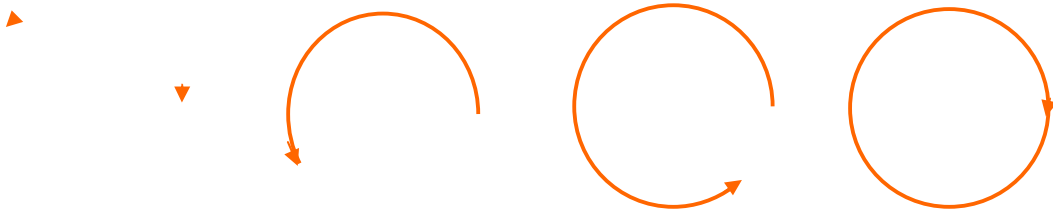


wPÎ - 1



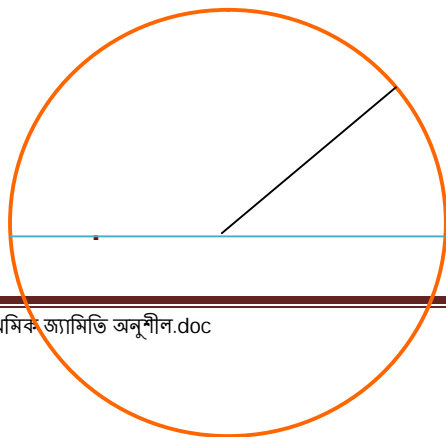
wPÎ - 2

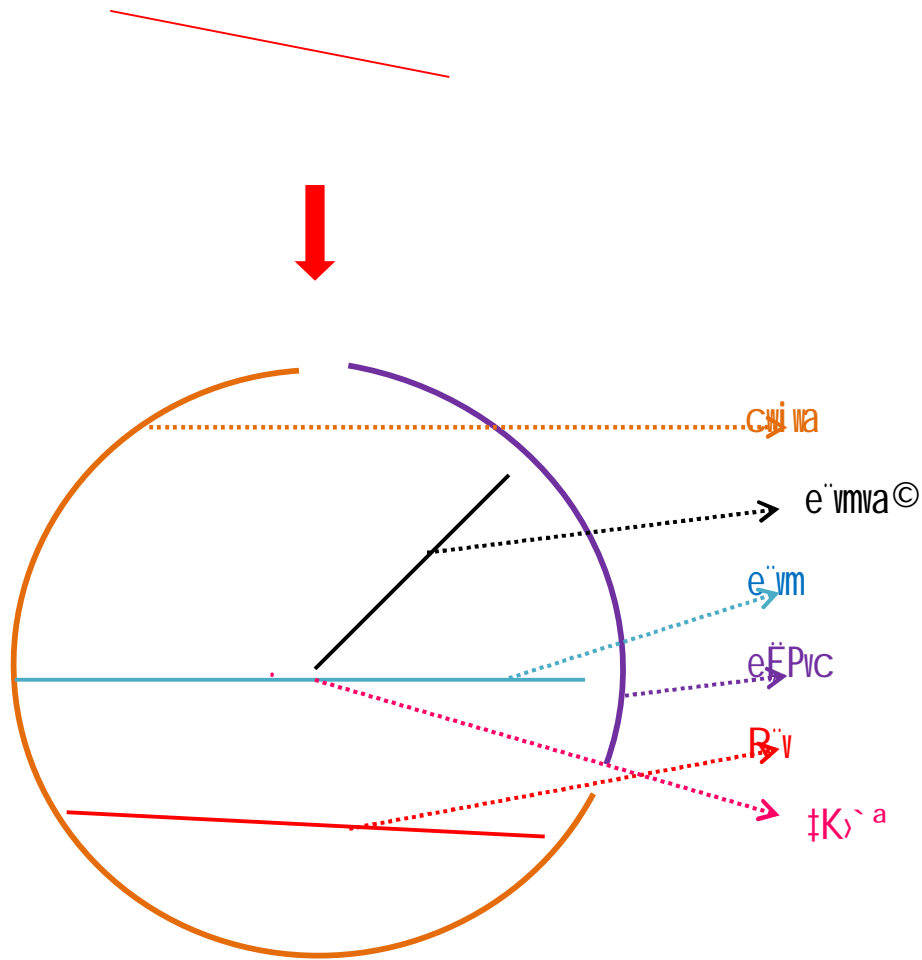
e± GKwU e±tiLv w`±q `Zwii nq | e±tiLwU thLvfb t_±K i i±nq N±j N±j tmLvfbB G±m
 tkl nq | e±±i gv±SI Ggb GKwU we`yAv±Q hv n±Z e±±i e±tiLvi `i-Zj mKj w`±KB
 mgvb | GuUB e±±i tK`± AZGe e±GKwU Ave× e±tiLv hv Zvi tK`± a n±Z me±q mgvb
 `i-Zj_v±K | w±PArgiv GKwU e±tiLv±K ax±i ax±i Ave× n±Z t`Ltev hv Aetk±l e± `Zwii
 K±i±Q |



- th eμti Lv w` tq eĒ tZwi nq Zvi bvg cwi va |
- eĒEi tK` n̄tZ cwi va ch̄ i-Z; eĒEi e`vmaⓄ
- eĒEi tK` w` tq GKcvk t_tK Ab`cvk ch̄ i-Z; e`vm |
- Avevi e`v̄mi Āt̄K e`vmaⓄ
- eĒEi w̄FZti GKcvk t_tK Ab`cv̄ki th̄Kvb ` i-Z; R`v |
- cwi vai th̄Kvb Ask eĒPvc

wb̄Pi eĒEi w̄P̄Ūt̄K t̄f̄t̄½ w` tq w̄w̄f̄b̄ōAsk w̄P̄w̄ȳZ Kivi t̄P̄óv Kwi :

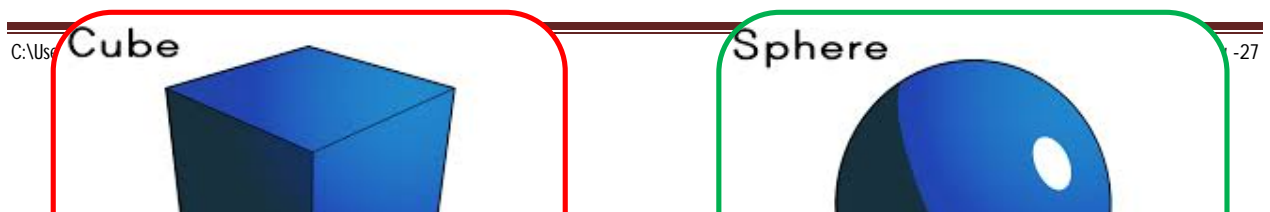




thtnZæ''vml e'tËi GKcvk t_tK Ab''cvtk wgtktQ ZvB e''m GKcÖi R''v| Zte metPtq
eo R''v|

Nbe'' (Solids)

Avgiv Kjg w`tq wj wL| eB cwo| tcbwmj e't. tcbwmj iwL| tUwj wFktb gRvi KvU©t` wL|
BU w`tq emno ^Zwi Kwi | tevZtj cwb iwL| Rb''v' tb gRv`vi tKK LvB| Avj gwi tZ Kvc
iwL| eB, tcbwmj e' , tUwj wFkb, BU, tevZj , Rb''v' tbi tKK, Avj gwi BZ`w` mKj B
Nbe''| GKUZtLqvj Kitj t`Lv hvte Dctii cÖ' tKiB ^`N''©cÖI D''PZv AvtQ| Zvntj
th e''i %N''©cÖI D''PZv AvtQ ZvB Nbe''| Avgiv KtqKwJ cwivPZ AvKvtii Nbe''i
AvKwZ. t` wL-



Qne- 1 : fvBKiv iaU



Qne- 2 : evm



Qne- 3 : tgvUv cvBc



Qne- 4 : †Uibm ej



Qne- 5 : AvsiU

Qne- 6 : wKUK"vU PK†j U Mvno



Qne- 7 : Q°v

Qne- 8 : Lrevi tclb I Mvno



Q1e- 9 : SvD MvQ



Q1e- 10 : gM



Q1e- 11 : cW_ex




Q1e- 12 : wWg

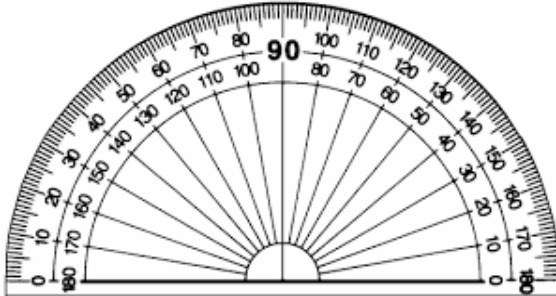

| Nbe ⁻ i AvKvZ | Q1e i b [†] |
|--------------------------|----------------------|
| ‡Mj K | |
| ‡KvK | |
| NbK | |
| ‡ej b | |



vbtpi QnefZ AfbK ,tjv Nbe y AvKwZ j Kwfbv AvfQ | tLvtR tei Kivi tPov Kwi tKvb
 AvKwZi KZ ,tjv Qne AvfQ |



| বিগ I কিR | wPÍ |
|--|-----|
| <p>1 iaj vi (Ruler): tKvb wKQz ^ N" gvcvi Kvtr iaj vi e"envi Kiv nq GuUi mnvth" LvZvq 6 BwA A_ev 15 tmvUngUvi chQ thtKvb gvrci mij ti Lvsk AvKiv hvq hvi %N@gvctZ nte Zvi GKcSi iaj vtii kY" `vMKvUv cSi mvt_ mgvb Kti emvtZ nq </p> | |

| | |
|---|--|
| <p>2 Káúvm (Compass): GKú eĚ ev eĚPvc AvkúZ e`envi Kiv nq Gi `Bú cv AvtQ GKú cvq mi æwcb Ges Ab` cvtq tcbwmj j vMvúbv e`e`v`_vúK eĚ ev eĚPvc Avkúvi mgq Káúvúmi wcb j vMvúbv cvtq tenk Pvc ti tL nvj Kvfvúte tcbwmj hÿ cvtK NjvúZ nq </p> |  |
| <p>3 wúfvBwvi (Divider): wúfvBwvi t`LúZ Káúvúmi gúZv wKš`Gi `Bú cvtqB mi æ wcb j vMvúbv`_vúK tKvb ti Lvstúki % tN`© gvc tbqvi KúR wúfvBwvi e`envi Kiv nq </p> |  |

| | |
|---|--|
| <p style="text-align: center;">bvg I KvR</p> | <p style="text-align: center;">wú</p> |
| <p>4 Pvúvi (Protractor) : Pvúvi cáb KvR ntjv tKvY Avkúv I tKvY gvcv Pvúvi wbtúPi w`úK gvSLvútb GKúw ve`_vúK hv cv` ve`_y bvtg cwi wPZ Aúbk mgq GB ve`úK (+) wPúy w`úq ev wQ` áKúti eSvútbv nq tKvY Avkúv ev gvcvi tÿtú GB cv` ve`úK tKšwYK ve`_y Dci mWkfvúte tdj tZ nq Pvúvi `Bcvútk 0° ntZ 180° chS` wM KvUv`_vúK tñw`úK tKvY gvcv nq tñBw`úKB 0° t`úK`i i æKúti tKvúYi wntme KúZ nq </p> |  |
| <p>5 wú tKvY (Set square): GKúw R`wgvZ</p> |  |

| | |
|--|---|
| <p>et. $\hat{B}U \hat{w} \hat{t}KvY _v\hat{t}K e\hat{u}ea e\hat{e}nvi$ $_vK\hat{t}j mvaviYZ: mgv\hat{s}f\hat{v}j mij\hat{t}iLv$ $mgv\hat{s}l\hat{i} K Av\hat{K}vi Rb\hat{e} G\hat{t} i e\hat{e}nvi Kiv nq$ $\hat{w} \hat{t}Kv\hat{t}Yi mnv\hat{t}h\hat{e} Lv mn\hat{t}RB wewfbc\hat{e} \hat{t}N\hat{e} \hat{e}$ $ev\hat{u}i mgv\hat{s}l\hat{i} K Av\hat{K}v hvq$</p> | |
| <p>6 kvcbi (Sharpner) : $tcbw\hat{t}j i gv_v$ $mP\hat{t}j v Ki\hat{t}Z kvcbi e\hat{e}nvi Kiv nq$ $mP\hat{t}j v Kivi mgq tcbw\hat{t}j \hat{t}K kvcb\hat{t}i i$ $wb\hat{w} \hat{e} RvqMvq \hat{t}i\hat{t}L GK\hat{w} \hat{t}K Nj\hat{t}Z nq$</p> |  |
| <p>7 B\hat{t}i Rvi (Eraser) : $tcbw\hat{t}j i _vM ev$ $tj Lv g\hat{t}0 tdjvi Kv\hat{t}R B\hat{t}i Rvi e\hat{e}nvi Kiv$ $nq _vM ev Act\hat{e}vRbxq tj Lv g\hat{t}0 tdjvi$ $mgq evgn\hat{v}tZ LvZv a\hat{t}i Wbn\hat{v}tZ B\hat{t}i Rvi$ $wb\hat{t}q Avj Z\hat{t}i _vM ev tj Lvi Dci NI\hat{t}Z$ $nq G\hat{t}Z mn\hat{t}RB _vM ev tj Lv g\hat{t}0 hvq$ $KL\hat{t}bv tenk k\hat{w}^3 LvU\hat{v}t\hat{b}v wK bq$</p> |  |

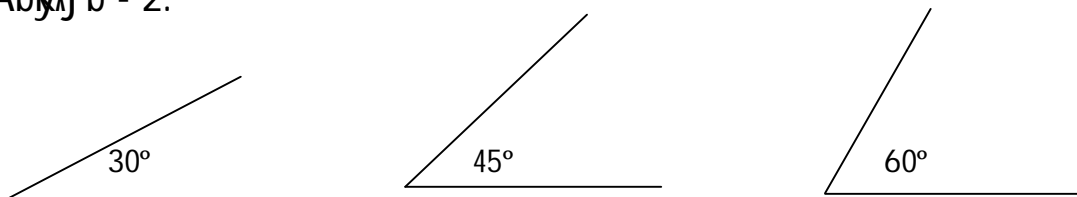
mgvavb

AvKwZ. Abkxj b - 1: Pvi $\hat{t}KvYv$ -2,6,9,11 ; $wZb\hat{t}KvYv \hat{N}$ 1,3,5 Ges $tMvj vKvi$ - 7,10 |

AvKwZ. Abkxj b - 2: Pvi $\hat{t}KvYv$ - $2wU$; $wZb\hat{t}KvYv$ - $2wU$ Ges $tMvj vKvi$ $2wU$ |

$\hat{t}KvY$ Abkxj b - 1: 1 - 130° ; 2 - 20° Ges 3 - 40° |

$\hat{t}KvY$ Abkxj b - 2:



90°

120°

†KvY Abkxj b - 3: 1- 110°-†KvY ; 2- 90° mg†KvY ; 3- 40°m†KvY ; 4- 10°m²†KvY ; 5- 110°-†KvY ; 6- 90° mg†KvY ; 7- 70° m²†KvY ; 8- 90°mg†KvY ; 9- 65° m²†KvY |

Zj Abkxj b : Qne 1-G 1vU eμZj ; Qne 2-G 6vU mgZj ; Qne 3-G 1vU mgZj | 1vU eμZj ; Qne 4-G 6vU mgZj ; Qne 5-G 2vU eμZj ; Qne 6-G 2vU mgZj | 1vU eμZj |

Nbe'Abkxj b : †Mvj K- 4,11 ; †KvYK- 1,9 ; NbK- 2,6(AvsikK),7 ; tej b- 3,5, 6(AvsikK), 8(AvsikK) |

