४

मेरो गणित

कक्षा ४

d]/f]ul0ft

slff $

gjkfn ;/sf/
lzIff dGqfno
kf7\oj|d ljsf; s]Gb|

k|sfzs M g]kfn ;/sf/
lzÔf dGqfno
kf7\oj|d ljsf; s]jb|
;fgf]7dL, eStk'/

ISBN: 978-999-33-719-8-4

© ;jf{wsf/ k|sfzsdf

s]jb|sf] lnlvt :jLs[tljgf o;sf] k'/}jf cfHzs efu xax' k|sfzg ug{ kl/jt{g u/]/ k|sfzg ug{ sg}ljBtLo ;fwg jf cGo k|jlwaf6 /]s8{ug{/ k|tlnlk lgsfNg kf0g]5g\ . kf7\ok'ts ;DaGwdf ;'rfj ePdf kf7\oj|d ljsf; s]jb| ;Dkfbg tyf k|sfzg zfvfdf k7f0lbgXg cg'/f]w 5 .

klxnf]; =s/0f M lj= ;=@)%@
kl/dflh{t bf]if]; =s/0f M lj= ;=@)^%
kgdf{0f M lj= ;=@)^&

'ljBfno kf7\ok'ts tyf kf7\o;fdu|L 5kf0f tyf ljt/0f lgb]zsf @)^&' cg';f/ of] kf7\ok'ts k'jf{rn / klZrdf~rn ljsf; If]qsf #@ lhNnfdf dfq z}lIfs ;q @)^* sf nflu lghL If]qsf dbs tyf ljt/saf6 lajL ljt/0f ug{ :jLj[t kf7\ok'ts xf].

– kf7\oj|d ljsf; s]jb| ;fgf]7dL, eStk'/

dbs M

ljt/s M

d'No M ?= ==========

tkf0f{sf]k'ts df 5kf0k|jlw;DaGwL sg}ql6 k]nf k/]df pSt k'ts dbs tyf ljt/s jf :yfgLo lajltfaf6 ;f6\g ;Sgxg]5 .

– dbs tyf ljt/s

xfd|]egf0

ljBfno txsf]lzIffnf0{p2]Zod'hs, Jofjxfl/s, ;d;fdlos /f]huf/d'hs agfpg ljleGg ;dodf kf7\bjnd, kf7\bk'ts ljsf; tyf kl/dfhg ug]{sfo{nf0{lg/Gt/tf lb0b}cfPsf]5 . ljBfyL{df /fi6«/ /fli6«tfk|t Pstfsf]efjgf k|bf u/f0{g]{tstf, cg'zf;g / :jfjnDagh:tf ;fdflhs Pjd\rfl/lqs u0f tyf cfwf/e't eflifs tyf ul0ftLo ;Lksf]ljsf; u/L lj1fg, ;'rgf, k|jlw, jftfj/0f / :jf:Yo;DaGwL cfwf/e't 1fg / hLjgf]kof]uL ;Lksf]dfWodn] snf;f]bok|lt cle?lr hufpg';l;hgzLn ;Lksf]ljsf; u/fpg' / ljleGg hfthflt, ln^\u, wd{efiff, ;+s[tk|t ;defj huf0{;fdflhs dNo / dfGotfk|tsf];xof]uf]Tds / lhDd]f/Lk0f{ cfr/0f ljsf; u/fpg'cfhsf]cfjZostf ag]sf]5 . oxL cfjZostf kl'tsf nflu lzIff;DaGwL ljleGg cof]usf ;'rfj, lzIfs tyf cleefjsnufot lzIff;'u ;Da4 ljleGg JolSt ;lDdlnt uf]7L / cGtlj{tofsf lgisif{af6 kl/dfhg ul/Psf]kfylds lzIff kf7\bjnd @)^% -k/LIf0f_ cg';f/ b]zsf !) lhNnfsf %) cf}f ljBfnodf k/LIf0f u/L k/LIf0faf6 k|Kt k[7kf]f0f ;d]tsf cfwf/df yk kl/dfhg u/L of]kf7\bk'tssf]ljsf; Pjd\kl/dfhg ug]{sfo{ePsf]5 .

k|tt k'ts o;cl3 kfylds lzIff kf7\bjnd, @)$(cg';f/ 8f= ;Gtf]fdfg df:s]/ xl/gf/fo0f pkfWoåf/f n]vg tyf ;^\df thfw/åf/f ;Dkfbg ePsf]lyof]. o;nf0{kl/dflh{ kf7\bjnd @)^% cg';f/ kl/dfhg tyf kgn]vg sfo{lrqk|;fb b]jsf]6f, a?0fk|;fb j]B, xl/gf/fo0f pkfWofo, l8NnLZj/ kwfg, 808kfl0f zdf{lgdf{f ufx]d, gf/fo0f jfUn]/ Zofdk|;fb cfrfo{/x]sf] sfo{snåf/f ePsf]xf]. o; sfo{df xl/af]n vgfn, k|= 8f= l;l4k|;fb sf7]/fnf, 8f= lzj/fd Gof]kfg]/ d'Sb/fh zdf{d]tsf]dxEjk0f{of]ubfg /x]sf]5 . o;sf]efiff;Dkfbg ljio0fk|;fb clwsf/L / nf]skfsfz kl08taf6 ePsf]xf]. o; k'tssf]6f0k;]6^ ho/fd s0'Sn], n]lcfp6 l8hf0g gjLGbdfg /fhe08f/L tyf lrqf^\sgsf]sfo{cjLGbdfg >]7 / lxdfno uf}dn] ug{ePsf]xf]. pxf'¿nufot o;sf]ljsf; tyf kl/dfhg sfo{df ;+Ug cGo ;a}nf0{kf7\bjnd ljsf; s]b|wGojfb k|s6 ub}5 .

kf7\bk'tsnf0{lzIf0fl;sf0sf]dxEjk0f{;fwgsf ¿kdf lnOG5 . cg'ejL lzIfs / lh1f;' ljBfyL{n]kf7\bjnåf/f nlIft l;sf0pknlAwnf0{ljljw ;f]t / ;fwgsf]kbfu u/L cWoog cWofkg ug{;S5g\. o; kf7\bk'tsnf0{;s]Dd ljljofsnfkdvL / ?lrs/ agfpg]kbTg ul/Psf]5 tyflk o;df c´}efiffz}hL, ljifoj:t' tyf k|tlt / lrqf^\sgsf b[i6n]sdLsdhf]7L /x]sf xg ;S5g\. ltgsf];'wf/sf nflu lzIfs, ljBfyL{ cleefjs, al4hLjL Pjd\;Dk0f{ kf7sx¿sf];d]t dxEjk0f{eldsf /xg]x'bf ;Da4 ;a}sf]/rgfTds ;'rfjsf nflu kf7\bjnd ljsf; s]b|xflbs cg'/f]w ub}5 .

g]kfn ;/sf/
lzIff dGqfno
kf7\bjnd ljsf; s]b|
;fgf]7dL, eStk'/

ljifo ;'rL

kf7	zLifs	k[7 ;aVof
1.	Hofldlt	!–!!
1.1	7f]; cfs[tx¿	!
1.2	7f]; j:tsf];tx, lsgf/f / sgf	@
1.3	sf0fx¿	$
1.4	sf0fx¿sf]gfk	^
1.5	10/10 l8ul;sf]cGt/df sf0fx¿sf]/rgf	*
1.6	90° eGbf 7'nf / ;fgf sf0fx¿	(
2.	;aVofx¿sf]wf/0ff	!@–@%
2.1	;aVofx¿sf]kl/De	!@
2.2	s/f8;Ddsf ;aVofx¿	!%
2.3	;aVofx¿sf]zG'ofGt	@)
2.4	¿9 / ;e'St ;aVofx¿	@#
2.5	¿9 u0fgv08x¿	@$
3.	ul0ftsf cfwf/e"t ljlofx¿	@^–$@
3.1	36fp	@^
3.2	36fp;DaGwL Jofjxfl/s ;d:ofx¿	@*
3.3	u0fg	#)
3.4	u0fg;DaGwL Jofjxfl/s ;d:ofx¿	#@
3.5	efu	##
3.6	efu;DaGwL Jofjxfl/s ;d:ofx¿	#*
3.7	;/nLs/0f	#(
4.	leGg, bzdnj, k|tzt / P]ss lgod	$#–^(
4.1	leGg	$#
4.2	bzdnj ;aVof	%^

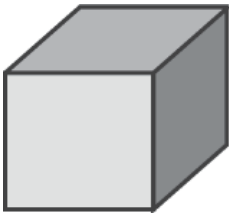
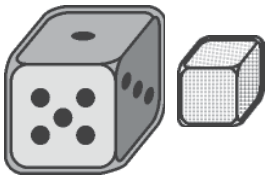
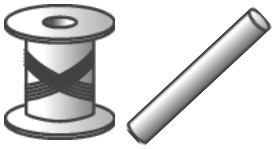
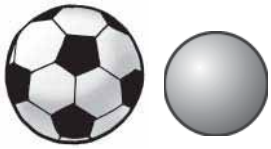
4.3	k|tzt	^&
4.4	P]ss lgod	^(
5.	;do, db| / gfktf}n	&)–!)@
5.1	lbg, xKtf, dlxgf / jif{	&)
5.2	db|	*!
5.3	b'/L	*$
5.4	cfotsf]kl/ldlt	*(
5.5	lf0fkmn	(!
5.6	lfdtf	($
5.7	cfotg	(*
5.8	tf}n	((
6.	lan / ah]6	!)#–!)$
7.	tYofª\szf:q	!)%–!!!
7.1	:tDe n]vflrq	!)%
7.2	ydf{d6/ k9\g]	!)*
7.3	j|dhf8fx¿	!)(
8.	;dX	!!@–!!%
8.1	kl/ro	!!@
8.2	;dX n]Vg]tl/sf	!!$
9.	alhul0ft	!!^–!#)
9.1	rn / dfg	!!^
9.2	alhlo kb tyf cleJo~hs	!!*
9.3	;hftlo / ljhftlo kbx¿	!!(
9.4	alhlo ;dls/0f	!@%

kf7 1

Hofldlt (Geometry)

1.1. 7f]; cfs[tx¿

tnsf]tflnsfdf s}kL 7f]; j:tx¿, ltgLx¿sf]ul0ftLo gfd / s}kL ef}lts gdbgfx¿ lbOPsf 5g\. tflnsfdf lbOPh:t} cGo bO{cf6f ef}lts gdbgfx¿ yKg ;S5f}<

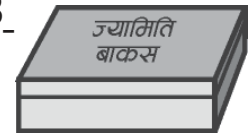
7f]; j:t'	ul0ftLo gfd	ef}lts gdbgfx¿
	cfotfsf/ 7f]; jf cfotfsf/ if8dlvf -;a}; tx cfotfsf/ 5g\._	
	3g -;a}; tx juf{sf/ 5g\._	
	a]ngf -cfwf/ j[Qfsf/ 5g\. cfwf/nfO{ j jl| ;txn]3/]sf]5 ._	
	uf]nf -uf]nf]7f]; cfs[t_	

1. tnsf k]o}s 7f]; j:t'sf]cfsf/sf]ul0ftLo gfd n]v M

-s_

-v_

-u_

-3_ 

-a_

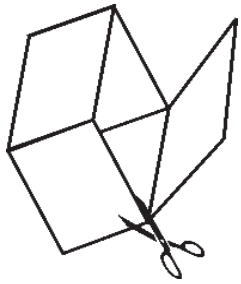
-r_

-5_

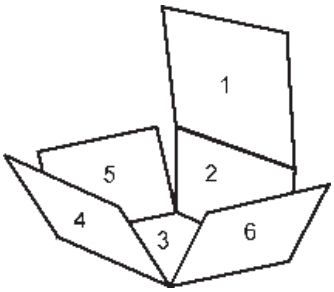
-h_

1.2. 7f]; j:t'sf] ;tx, lsgf/f / sdf

Pp6f rssf]a66f nfpm . rssf]a66f sdg HofldtLo 7f]; j:t'sf] gdbf xdg ;S5, eGg ;S5f}< xf] Tof] cfotfsf/ 7f]; j:t'sf] gdbf xf] . ca rssf] a66fnfO{ lrqdf b]lvfOPh:t}u/L s}lnPsf6/ vfnL x/] . s]lbPof}<

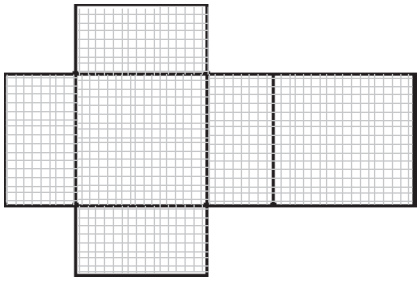


Pp6f cfotfsf/ 7f]; j:t' 6 cf6f cfotfsf/ ;txn] agfpg'sf] xG5, h:t} rssf]a66f .



cfotfsf/ 7f]; j:t'sf,

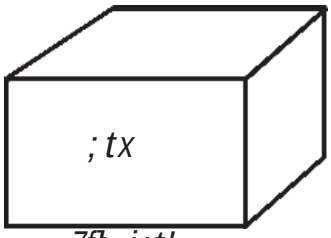
- ;a}; txx¿ cfotfsf/ xG5g\.
- o:tf cfotfsf/ ;txx¿ 6 cf6f xG5g\.



7f]; j:t'sf ;a}; tx b]lvg]u/L lvr}sf] lrqnfO{ Tof] 7f]; j:t'sf] hfnL -gf6_ elgG5 . hfnLnfO{ k6\bfP/ 7f]; j:t' agfpg ;lsG5 .

*hfnL -gf6_*

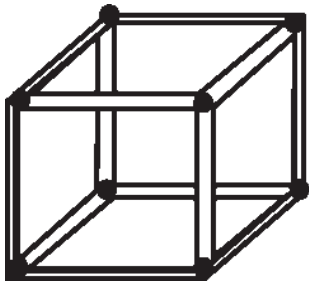
dflysf]pbfx/0fdf s}rLn]sf6/ vfh}sf] 6 cf6f ;tx b]vg]cfs[tnfO{kg]M k6\bfP/ rssf]a66f agfpg ;lsG5 . o;nfO{ cfk}kof; u/L x/] .



7f]; j:t'

ux'sf]5\ifnL jfh'; kf0k jfl;Gsfx¿ kof]u u/] 7f]; j:tsf]gdgf agfpg ;lsG5 .

;'ljsf]lrqdf ';tx' n]vsf]cfotfsf/ 7f]; j:t'/ h'; kf0kn]agsf]Tox\L 7f]; j:tsf] gdgf agfOPsf]5 . o;/L h'; kf0kn]agsf]7f]; j:tsf]gdgfnfO{vf]lhf] gdgf (Skeleton Model) elgG5 .

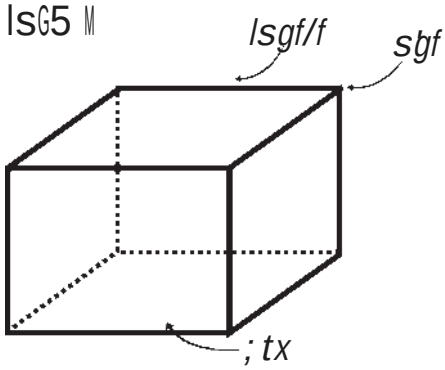

vf]lhf]gdgf

vf]lhf]gdgfdf hDdf slt 6'jlhf h'; kf0kx¿ kof]u ePsf 5g\< k]os h'; kf0kn] 7f]; j:tsf]lsgf/f (Edges) hgfp5 .

lrqdf 7f]; j:tsf]gdgfdf tLgcf6f lsgf/fx¿ Pp6f ljGbdf ldn]sf 5g\. o:tf ljGbx¿nfO{7f]; j:tsf]sgf (Vertices) elgG5 .

lrqsf]cfotfsf/ 7f]; df sltcf6f ;tx, lsgf/f / sgfx¿ 5g\< dflysf ljlofsnfkx¿af6 lgDglnlvt lgisif{df k'Ug ;lsG5 M

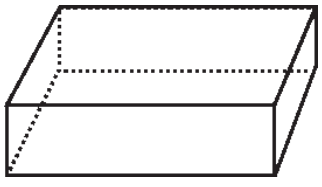
cfotfsf/ 7f]; j:tdf 6 cf6f ;txx¿, 6 cf6f lsgf/fx¿ / 6 cf6f sgfx¿ x'G5g\.



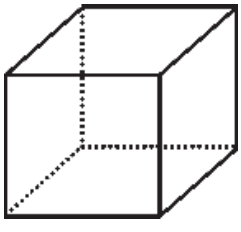
cEof;

1. tnsf k]os 7f]; j:tsf];tx, lsgf/f / sgfx¿sf];a\of n]v M

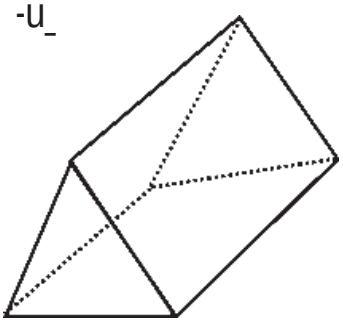
-s_



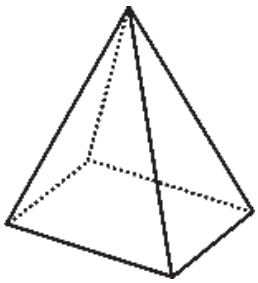
-v_



-u_



-3_



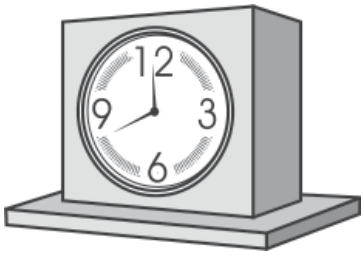
lzIf0f lgb]zg M

7f]; j:t'sf]lzIf0f ubf{sIffsf]7fdf k|]z ug{k"{cfÇgf]jftfj/0fdf kf0g]7f]; j:tx¿sf] ;ªsng lnP/ k:gxf];\. o:tf]j:t'b]vfpb}:yfgLo gfd / ul0ftLo gfd pNn]v ub}uP/ cGTodf tflnsf agf0{b]vfpgxf];\. ljBfyLnf0{klg 7f]; j:t'sf];ªsng u/L To:tf j:thf0{ ul0ftLo gfd lbO{juL{s/0f ug{nufpgxf];\. ;tx, sgf / lsgf/f k9fpb'f kpf]ufTds k4ltdf hfB lbgxf];\.

1.3 sf]0fx¿

xfdLn]sg}j:thf0{xftn]pr fNof"eg]xftsf jfx'x¿n]sf]0f agfp5g\.

xfdL lx88h ubf{xfdL| v66fx¿n]sf]0fx¿ agfpb}hfG5g\.

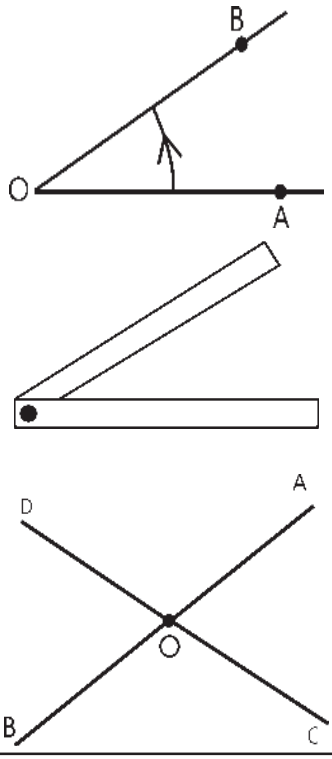


38Lsf ;0{¿ 3Dbfhfbf km/skm/s ;dodf km/skm/s gfksf sf]0fx¿ agfpb}hfG5g\.

o:t}sf]0f hgfpg ;Sg]s'kL yk pbfx/0f lbg ;S5f}<

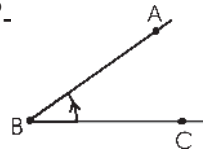
Pp6f /]vfv08sf]Pp6f 5]p ljGb'l:y/ /fvL csf{
5]p 3dfpb}hfbf /]vfv08n]sf0f agfpb}hfG5 .
lrqdf /]vfv08 OA n]ljGb'O nfO{l:y/ /fvL
3d]/ B df k|bf sf0f AOB agfPsf]5 . o;nfO{
∠AOB n]vg]ul/G5 . ∠AOB nfO{csf{tl/sfn]
∠BOA klg n]vg ;lsG5 . t/ ∠OBA jf ∠OAB
n]vg ;lsb}g, lsg xf]nf < afSnf]sfuhdf nfDrf
6'jlfx¿ sf6]/ bO{cf6f 6Kkf Pp6f ljGbdf 3Dg]
u/L ldnfP/ sf0f kl/jl0fsf] df8]n agfpg
;lsG5 .

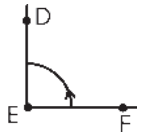
bO{cf6f /]vfx¿ cfk;df sfl6bf sf0f agfp5g\.
lrqdf /]vfx¿ AB / CD ljGb'O df sfl6bf
∠AOC ag]sf]5 . lrqdf sxL yk sf0fx¿ 5g\.
ltgLx¿sf]gfd n]vg ;S5f}<

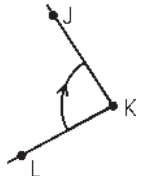


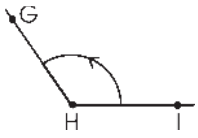
cEof;

1. tn lbOPsf sf0fx¿sf]gfd bO{tl/sfn]n]v M

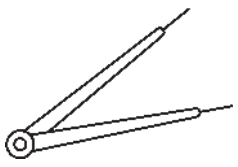
-s_ 

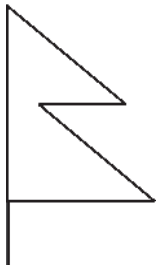
-v_ 

-u_ 

-3_ 

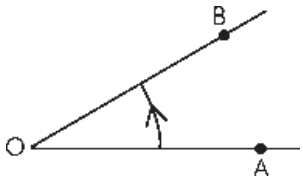
2. lrqdf sf0f aGg ;Sg]jf sf0fn]ag]sf sxL cfs[tx¿ lbOPsf]5 . o:t}yk
tLgcf6f cfs[tsf]lrq ltdf]sfkLdf n]vg M

-s_ 

-v_ 

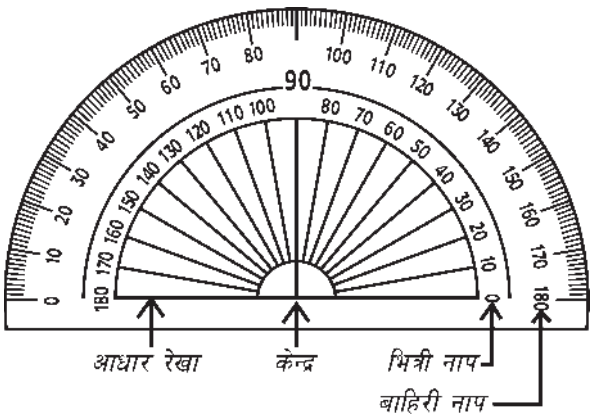
lzIf0f lgb]zg M
sf0fsf]kl/ro u/fpb}f ljBfyL{¿nfO{ef]hts hutaf6 sf0fsf pbfx/0fx¿ lbg nufpg'xf];\.
o:tf pbfx/0f oxf"h]hlt lbOPsf]5, Tof]; f^sf]hts dfq xg\ egL ;Dem'pko5t xG5 .

1.4. sf]0fx¿sf]gfk



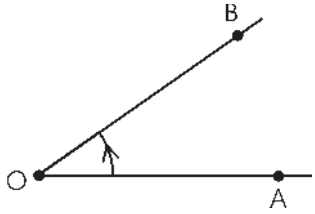
of] sf]0f slt gfksf]5, s;/L yfxf kfpg]xf]nf <

sf]0fx¿ nf]{gfkg xfdL kf]6\6/ (Protractor) kbfy{ u5f{. sf]0f gfkg]Psf] l8u| (°) xf]. lrqdf lbOPsf]kf]6\6/nf]{/fdf]t ú xf]. kf]6\6/df leq\ / aflx/L u/L b]{zfGt :sf]h 5g\. leq\ :sf]hsf] 0° nf]lvPsf]7fpFdf aflx/L :sf]hsf] 180° nf]lvPsf]5 . To;/L g}aflx/L :sf]hsf] 0° nf]lvPsf]7fpl‘t/ leq\ :sf]hsf]180° nf]lvPsf]5 . leq\ :sf]hsf]bfoft‘l/ 0° af6 a9]/ j|dz{ afofFdf j[4 xb}180° df ku]sf]5 . aflx/L :sf]hsf]afofl‘t/ 0° af6 ;? e]{j[4 xb}j|dz{ bfofl‘t/ 180° ;Dd ku]sf]5 . sf]0fx¿ gfkg ;lhnf]xf];\ eg\ o;/L b'j}t/ :sf]h agf]OPsf]xf]. tnsf sf]0fx¿ gfk\ x]/f}t .

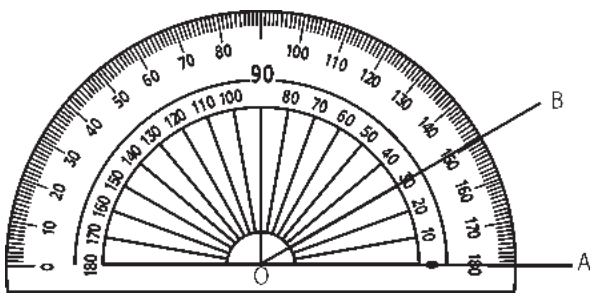


AOB nf]{gfkgsf nflu,

- sf]0f hgfpg] lj:Gb' o nf]{ kf]6\6/sf] s]Gbdf ldnfpg]/ OA nf]{ kf]6\6/sf cfwf/ /]vfdf ;lwf l7Ss ldnfP/ /fVg].

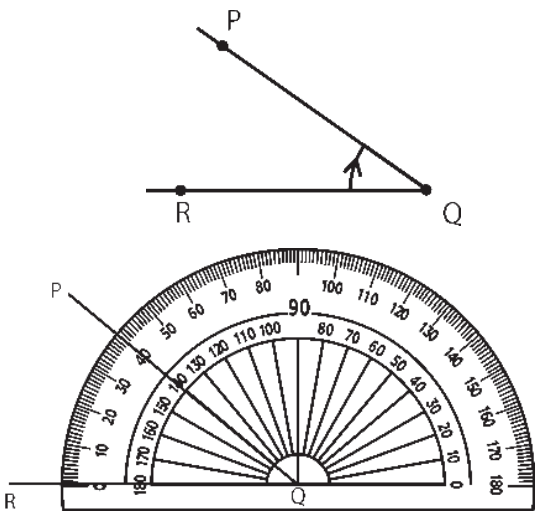


- /]vf OB kf]6\6/sf] leq\ :sf]hsf] 30° nf]lvPsf] 7fpFdf k/]sf]5 . To;}n] ∠AOB sf] gfk 30° eof].



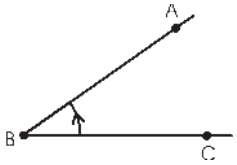
To;/L g}sf]Qf **PQR** gfkgsf nflu,

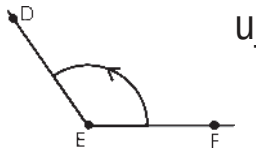
- sf]Qf hgfpg] lj:Gb' Q nfO{ kf6\6/sf] s]Gbdf ldnfpg] / QR nfO{ kf6\6/sf cfwf/ /]vfdf ;Lwf ldnfP/ /fVg].
- PQ n]kf6\6/sf]aflx/L :sndf 40° nv]sf]7fpdf sf6]sf]5 . To;}n] ∠PQR sf] gfk 40° eof].

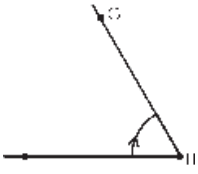


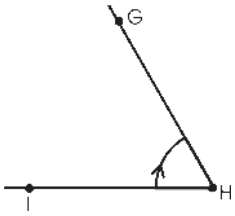
cEof;

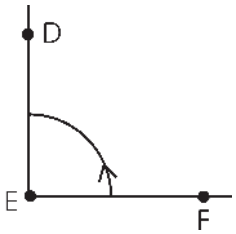
1. tnsf k]o]s sf]Qfx¿nfO{kf6\6/n]gfk]/ ltgLx¿sf]gfk l8u|ldf slt x'G5, sfkLdf nv] M

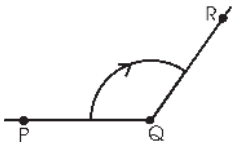
-s_ 

-v_ 

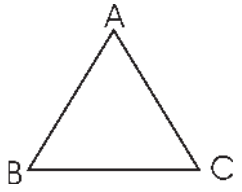
u_ 

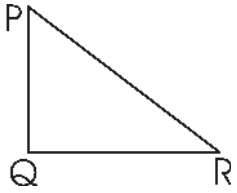
-3_ 

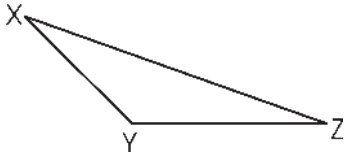
-a_ 

-r_ 

2. lrqdf lbOPsf k]o]s lqehsf leqL sf]Qfx¿ gfk M

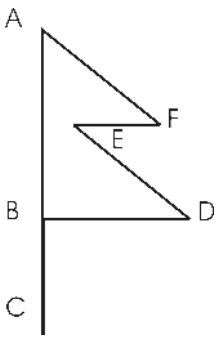
-s_ 

-v_ 

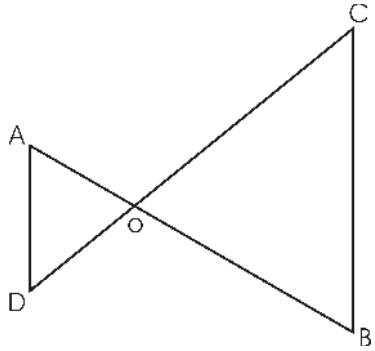
-u_ 

3. tnsf k]o}s lrqdf ePsf sf0fx¿sf]gfd n]v]/ gfk;dL kQf nufpm M

-s_



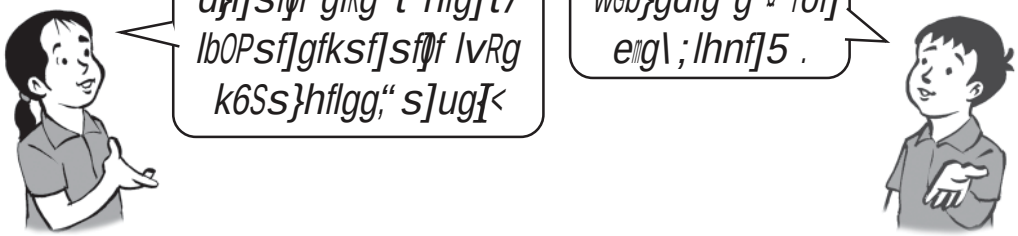
-v_



lzIf0f lgb]zg M

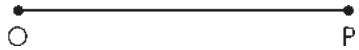
sf0fx¿s] gfk l;sfpb\f k|/sk|/s ;f0hsf sf0fx¿ af8{df lvr] ljBfyL{nf0{gfkg nuf0{ljBfyL{sf] cfTdan a9fpg ;lsG5 . o;/L g}xfdL jl/kl/ /x]sf sf0f hgfpg] j:tx¿ ;a}sng u/L lrq sf]7] jf sfg{nuf0{tL j:tdf ePsf sf0fx¿sf]gfk lgsfNg nufpg ;lsG5 .

1.5 10/10 l8u|sf]cGt/df sf0fx¿sf]/rgf

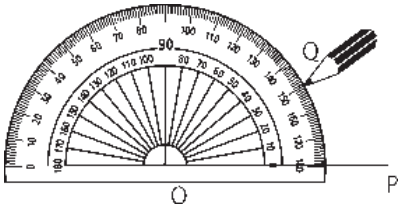


30° gfk ePsf]Pp6f sf0f lvrL x]/f}x}t <

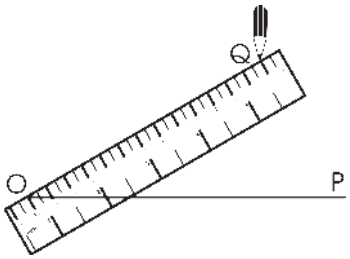
- sfkLdf sf0f lvRg]7fpdf Pp6f ljGb'o n]v]f}.



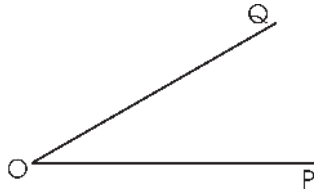
- o af6 Pp6f ;lwf /]vfv08 OP lvrf}.
- kf6\6/sf s]bdf ljGb'o kg]{u/L OP nf0{ kf6\6/sf cfwf/ /]vfdf ldnfcf}.
- kf6\6/sf]3/fdf leqL :sJnsf]30° n]v]sf] 7fpdf k]G;nn]lrÅg nuf0{ljGb'Q ca}sg u/f}.



- ca kf6\6/nf{x6fP/ O / Q nf{?n/sf] ;xfotfn]hf8f}.
- rflxPsf]30° sf]sf0f POQ tof/ eof].
- ∠POQ = 30°



o;/L g}cGo rflxPsf gfksf sf0fx¿ lvRg ;lsG5 .



cEof;

1. lgDgInlvt gfk ePsf sf0fx¿ kf6\6/sf];xfotfn]lvr M

-s_ 20° -v_ 40° -u_ 50° -3_ 60° -ª_ 80°

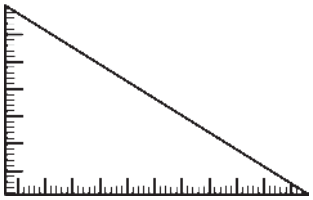
-r_ 90° -5_ 110° -h_ 120° -´_ 140° -`_ 150°

lzIf0f lgb]zg M

lbOPsf]gfksf]sf0f lvRg]kf7sf]lzIf0f ubf{cfkm\h]af8]df z]Ifs ;fdu|sf]dbtn] /rgf u/]kl5 ljBfyL{nf0{sIff sfo{sf ¿kdf ug{lbbf pko'St x'G5 .

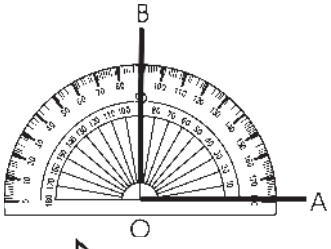
1.6 90° eGbf ;fgf / 7\hf sf0fx¿

;ü}sf]lrq ;6:Sjfo/sf]xf]. ;6:Sjfo/sf]Pp6f sf0f 90° sf]xG5 .



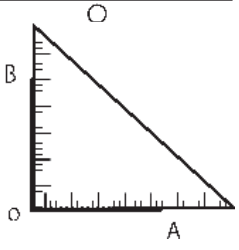
kf6\6/sf]kbfu u/L 90° sf]sf0f lvr .

ltdLn]lvr}sf]sf0f AOB sf]ljGb'O df ;6:Sjfo/sf] 90° ePsf] sgfnf0{ ;6:Sjfo/sf lsgf/fx¿ sf0f agfpg]/]vfv08x¿df ldNg]u/L /fv]/ x]/ .

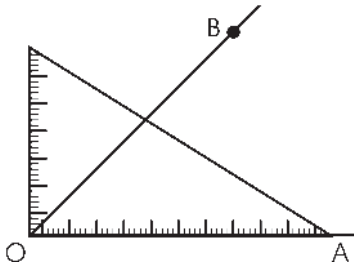


90° gfk ePsf]sf0fnf0{;dsf0f elgG5 .

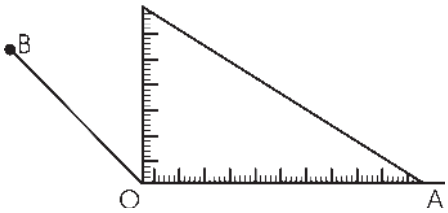
;]Sjfo/ kbfu u/L ;dsf0f, ;dsf0feGbf 7\hf jf ;fgf sf0fnf0{lrGg ;lsG5 .



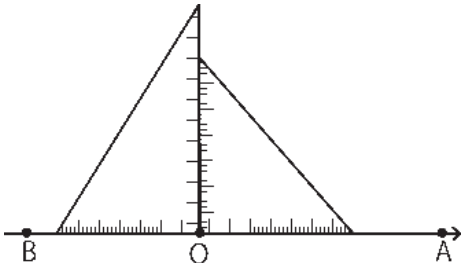
;ü}sf] lrqdf ∠AOB sf] ehf OA nfO{ ;6:Sjfo/sf]cfwf/ ehfdf ldnfpb\f sf]fsf] af‘SL ehf OB klg ;6:Sjfo/ leq}k/}sf] 5 . o:tf]cj:yfdf ∠AOB, 90° eG\bf ;fgf] eof] . o:tf 90° eG\bf ;fgf sf]fx¿nfO{ Go\gsf]f (Acute Angle) elgG5 .



;ü}sf]lrqdf ∠AOB ehf OA nfO{;6:Sjfo/ sf]cfwf/ ehf;ü ldnfO{/fVbf sf]fsf]af‘SL ehf OB ;6:Sjfo/ aflx/ k/}sf]5 . o:tf] cj:yfdf ∠AOB, 90° eG\bf 7\hf eof]. o:tf 90° eG\bf 7\hf sf]fx¿nfO{clws sf]f (Obtuse Angle) elgG5 .



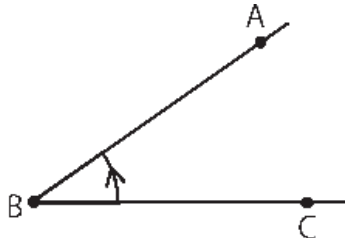
sg}sf]fsf]gfk bO{;dsf]f klg xg\ ;S5 . o:tf sf]fx¿nfO{;/nsf]f (Straight Angle) elgG5 . ;/nsf]fsf]gfk 180° xG5 . ;ü}sf] lrqdf bO{cf6f ;6:Sjfo/nfO{ ;dsf]fdf ldnfP/ /fVbf AOB sf ehfx¿ OA / OB ;6:Sjfo/sf]cfwf/ ehfdf ldn}sfn] ∠AOB = 180° eof]. oxf“ AOB Pp6f ;/nsf]f xf].



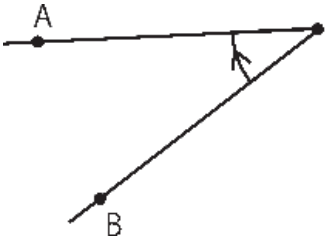
cEof;

1. tnsf sg\sg sf]fx¿ ;dsf]f, Go\gsf]f, clwssf]f jf ;/nsf]f xg\, cg'dfg u/ . ltdf]cg'dfg ldNof]jf ldn}g ;6:Sjfo/ k|of]u u/L 56\bfpm .

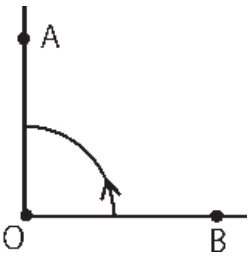
-s_



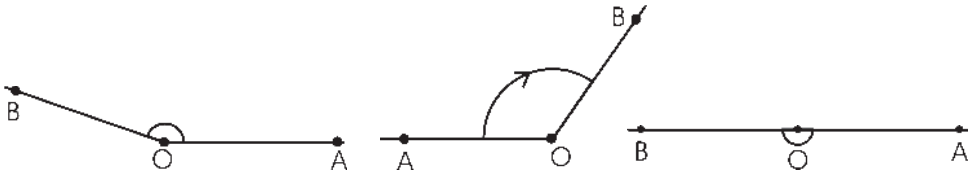
-v_



-u_

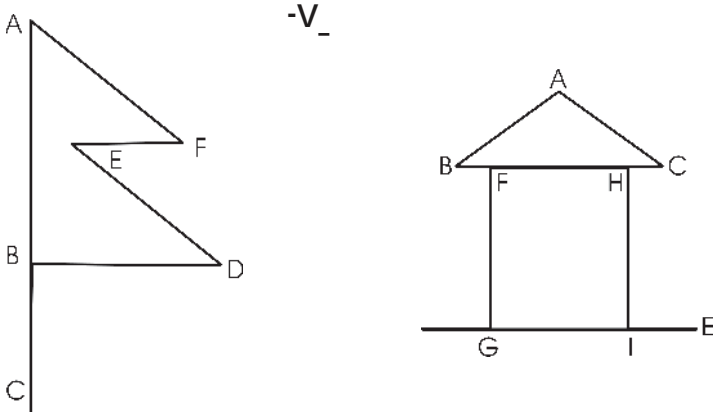


-3_ -a_ -r_



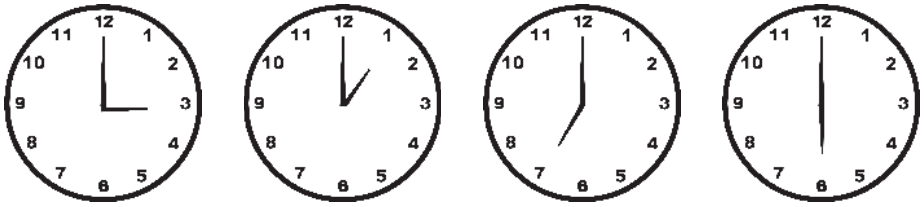
2. tnsf k|oTs lrqdf ePsf sf]0fx¿sf] gfd n]vL clwssf]0f, Go"gsf]0f jf ;dsf]0fdf ju{s/0f u/ M

-s_ -v_



3. tnsf k|oTs lrqdf 38Lsf ;Dk"0f{ agfPsf sf]0fx¿nfO{ ;dsf]0f, Go"gsf]0f, ;/nsf]0f / clwssf]0fdf ju{s/0f u/ M

-s_ -v_ -u_



lzIf0f lgb]{zg M

sf]0fx¿sf] ju{s/0f l;sfpb"f oxf"; ug]{ :Sjfo/ kof{u ul/of]. o;sf cltl/St kf]6/ kof{u u/] klg l;sfpg ;lsG5 . lqehfsf/ sfuhsf 6'jfx¿ sf6] tL lqehsf sf]0fx¿ Go"gsf]0f, ;dsf]0f jf clwssf]0f s]5g\ ju{s/0f ug{nufpg pkoSt xG5 . cfÇgf]jl/kl/sf j:tdf ePsf sf]0fx¿ ju{s/0f u/fpgsf nflu o:tf j:tsf] ;a}sng ljBfyL{ nfO{g}ug{ nufpgxf]\.

kf7 2 ;ª\ofx¿sf]wf/0ff

(Concept of Numbers)

2.1 ;ª\ofsf]kf/De

xfdf kvf{¿;ú clxn]xfdL;ú ePsf h:tf uGtLsf cª\sx¿ lyPgg\. uGtLsf cª\sx¿ gx'bf pgLx¿nfO{slt ck7'bf/f] hLjg latfpgk¥of] xf]nf < uGtLsf ;ª\of gePkl5 cfk"m;ú ePsf e}bfsf ayfgaf6 Pp6f x/fof]eg]s;/L yfxf kfpy'k]xf]nfg\< ;ú}sf]lrqnfO{x/] . of] lrq x/] klxn}sf dflg;x¿n]s;/L uGtL ubf{/x]5g\ eGgaf/]sx?L yfxf kfof}<

cfÇgf]vf/]leq PsPscf6f e}bf k;fpb}k]o}s e}bfsf nflu ¿vdf cyjf leQfdf wsf{¿ sf/] cfk"m;ú ePsf e}bfsf];ª\of yfxf kfpg]rng w/}nfdf];do;Dd rln/x'bf]. wsf{tflg/xg c;lhnf]ePkl5 xfdf kvf{¿n]Pp6f j:t'sf nflu Pp6f 9ª\uf /fv] uGg]kljlof klg ;? u/]xf]nfg\. of]t Pp6f cgbdfg dfq xf]t/ w/}k'/fgf ukmfleq dflg;n]o;/L tfg}sf w;f{¿ w/}7fpb'df b]vg kfOG5 . To;kl5 dflg;x¿n]cfk"m;ú ePsf j:t'sf];ª\ofcg';f/sf uf7fx¿ kfb]hfg]uy]klg elgG5 .

w/}kl5 cfP/ dflg;x¿n]xftsf cf}hfx¿ kbfu u/] uGtLsf ;ª\of hgfpg yfn]. bO{xftsf / v66fsf cf}hfx¿ ldnfpb'f @) ;Ddsf j:t'x¿ uGtL ug{dflg;nfO{ sl7g k/]g . dfgj ljsf;sf]Oltxf;df slxn]]v o;/L uGtL ;? eof]olsg u/] eGg t ;lsb}g t/ klg uGtLsf];?cft sl/a krf; xhf/ jif{cufl8 ePsf]cgbdfg ul/Psf]5 .

Pp6f j:t'

bO{cf6f j:t'

tLgcf6f j:t'

ljleGg dh'ssf hfthflt k|/sk|/s / ljsf;sf]0ltxf; 5666f566}ePsfn];+f/sf k|/sk|/s dh'ssf dflg;n]k|/sk|/s ;dodf cfÇg}lsl;dsf uGtL ;a}s]tx¿sf] ljsf; u/]. of]sfd dflg;sf]pTklQsf]xhf/f}xhf/ jif{kl5 cfP/ dfq eof].

I	II	III	IV	V	VI	VII	VIII	IX	X

/f]dg ;Eotfsf] jl|ddf ;?cft ePsf oL uGtLsf ca}sx¿ cfhef]n klg xfdLn] kbfu ub{5cfPsf]5f}. o:tf ca}ssf]kbfu ltdLn]sxf'sxf"bg]u/]sf 5f};'rL tof/ kf/ .

cfhef]n xfdLn]kbfu ug{5uGtLsf ;a}ofx¿ ;jf{yd lxGbx¿n]ljsf; u/]sf xg\. lxGbx¿n];?cft u/]sf oL ca}sx¿ ljsl;t x'b}), !, @, #, $, %, ^, &, *, (sf ¿kdf xfdLn]kbfu ul//x]sf 5f}. oL ca}sx¿nfO{b]gfu/L ca}s eGg]ul/G5 . oL ca}sx¿nfO{;+f/el/ c/ax¿n]k|rf/–k|;f/df NofP . oL ca}ssf]csf{¿k 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 cfh ;+f/el/ k|rngdf 5g\. logLx¿nfO{lxGb'–c/]as uGtLsf ca}s eGg yflnof].

o; kf7df ltdLn]lxGb'–c/]as k9\g, n}vg / uGg l;Sg]5f}.

k9 / a'M

slt ca}sn]agf}sf]<	;a}of	;fa}Vos gfd
Ps ca}sn]agf}sf];aeGbf ;fgf];a}of	1	Ps (One)
bO{ca}sn]agf}sf];aeGbf ;fgf];a}of	10	b; (Ten)
tLg ca}sn]agf}sf];aeGbf ;fgf];a}of	100	;o (Hundred)
rf/ ca}sn]agf}sf];aeGbf ;fgf];a}of	1000	xhf/ (Thousand)
kf"r ca}sn]agf}sf];aeGbf ;fgf];a}of	10000	b; xhf/ (Ten Thousand)
5 ca}sn]agf}sf];aeGbf ;fgf];a}of	100000	nfv (Lakh)
;ft ca}sn]agf}sf];aeGbf ;fgf];a}of	1000000	b; nfv (Ten Lakh)
cf7 ca}sn]agf}sf];aeGbf ;fgf];a}of	10000000	s/f8 (Crore)

pbfx/0f 1

;a\of 2345687 df ca\s 4 sf]:yfgdfg / o;sf]lj:tfl/t ¿k n]lv M

oxf“lb0Psf ;a\ofnf0{:yfgdfg tflnsfdf /fv]/ x]bf{–

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps
2	3	4	5	6	8	7

:yfgdfg tflnsfdf ca\s 4 b; xhf/sf]:yfgdf 5 . To;}n] ca\s 4 sf]lj:tfl/t ¿k 4 x 10,000 = 40,000 -rfnL; xhf/_ x'G5 .

pbfx/0f 2

;a\of 1258712 nf0{lj:tfl/t ¿kdf n]lv M

oxf;“

1258712 = 1 x 10,00,000 + 2 x 1,00,000 + 5 x 10,000 + 8 x 1000 + 7 x 100 + 1 x 10 + 2 x 1
= 10,00,000 + 2,00,000 + 50,000 + 8000 + 700 + 10 + 2

cEof;

1. tn lb0Psf]k]o}s ;a\ofdf 5 sg :yfgdf 5, n]lv M

-s_ 1,53,268 -v_ 51, 68, 719 -u_ 12,67,815

-3_ 3,45,628 -a_ 34,21,451 -r_ 27,35,869

2. lj:tfl/t ¿kdf n]lv M

-s_ 3,25,614 -v_ 19,82,543 -u_ 67,89,123

-3_ 67,30,195 -a_ 2,00,465 -r_ 70,40,053

2.2 s/f8;Ddsf ;aVofx¿

2.2 -s_ k9, 5nkmn u/ / sfkLdf n]v M

nfv	b; xhf/	xhf/	;o	b;	Ps
3	6	5	2	4	8

nfvsf]:yfgdf ca\s 3 5 . To;}h]3 sf]:yfgdfg 3 nfv = 3,00,000 xG5 .

nfv	b; xhf/	xhf/	;o	b;	Ps
6	9	2	5	2	0

nfvsf]:yfgdf ca\s 6 5 . To;}h]6 sf]:yfgdfg 6 nfv = 6,00,000 xG5 .

6,92,520 = 5 nfv aofgAa]xhf/ kf‘r ;o aL; xG5 .

8,06,888 = cf7 nfv, 5 xhf/ cf7 ;o c7f;L xG5 .

9,72,506 = gf}nfv axQ/ xhf/ kf‘r ;o 5 xG5 .

kf‘r nfv 5QL; xhf/ gf};o afx| = 5,36,912 xG5 .

;ft nfv t]x|xhf/ kGw| = 7,13,015 xG5 .

lzIf0f lgb]zg M

ljBfyL{¿nf0{;faVos gfdx¿ ofb ug{nufpgxf];\/ :yfgdfg tflnsfsf]kbf]u u/L nfv;Ddsf ;aVofx¿sf]wf/0ff lbgxf];\.

cEof;

1. 4 sf]:yfgdfg slt slt xG5, n]v M

   -s_ 3,54,032 -v_ 3,45,032 -u_ 4,35,032 -3_ 3,50,432

2. nfvsf]:yfgdf /x]sf ca\sx¿ n]v M

   -s_ 2,54,321 -v_ 5,63,204 -u_ 4,08,452 -3_ 9,75,608

3. clf/df n]v M

   -s_ 2,56,312 -v_ 3,35,258 -u_ 5,23,907 -3_ 6,66,298

4. c^a\sdf nj]v M

-s_ Ps nfv Ps;6]L xhf/ kf"r ;o 5

-v_ tLg nfv 5Aa\L; xhf/ b0{;o ;q

-u_ kf"r nfv ;Qf0; xhf/ cf7 ;o a\L;

-3_ gf}nfv krxQ/ xhf/ rf/ ;o af0;

2.2 -v_ k9, 5nkmn u/ / sfkLdf nj]v M

:yfgdfg tflnsfdf nfvkl5 s]cfp5 <

nfv	b; xhf/	xhf/	;o	b;	Ps	
1	0	0	0	0	0	= Ps nfv
2	0	0	0	0	0	= b0{nfv
5	0	0	0	0	0	= kf"r nfv
9	0	0	0	0	0	= gf}nfv

gf}nfvkl5 b; nfv cfp5 .

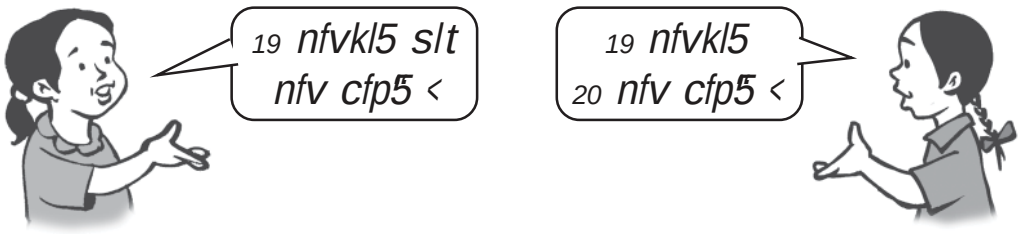
b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps	
1	0	0	0	0	0	0	= b; nfv

15,63,842 nf0{:yfgdfg tflnsfdf /fVbf –

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps
1	5	6	3	8	4	2

Ps b; nfv / kf"r nfv = 15 nfv x6\5 .

To;}n] 15, 63, 842 = kGw|nfv lq;6]L xhf/ cf7 ;o aofn\L; x6\5 .



20,16,857 = aL; nfv ;fx|xhf/ cf7 ;o ;GtfpGg xG5 .

kRrL; nfv 5AaL; xhf/ 5 ;o 5kGg = 25,26,656 xG5 .

cEof;

1. b; nfvsf]:yfgdf sg ca\s 5, n]lv M

   -s_ 12,23,345 -v_ 15,26,904 -u_ 21,35,608 -u_ 29,17,864

2. clf/df n]lv M

   -s_ 15,27,981 -v_ 25,27,003 -u_ 26,18,598 -3_ 29,82,581

3. ca\sdf n]lv M

   -s_ kGw|nfv 5 xhf/ tLg ;o ;q -v_ Psf0; nfv ;fx|xhf/ kfr ;o ;Qf0;

   -u_ rf}L; nfv kfr xhf/ kGw| -3_ pgGtL; nfv P3f/ xhf/ b0{;o PstL;

lzIf0f lgbZg M
:yfgdfg tflnsf kpf]u u/L tL; nfv;Ddsf ;a\ofx¿nf0{ca\s / clf/df n]lg] cEof; ug{ nufpgxf}l.

2.2. -u_ k9, 5nkmn u/ / sfkLdf n]lv M

29,00,000 = pgfGtL; nfv xG5 .

29,00,000 df 1,00,000 yKof]eg] 30,00,000 xG5 .

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps
3	2	9	3	6	5	7

3 b; nfv / 2 nfv = aQL; nfv

32,93,657 = aQL; nfv lqofgAa]xhf/ 5 ;o ;GtfpGg xG5 .

39,01,500 = pgGrfnL; nfv Ps xhf/ kfr ;o xG5 .

45,42,396 = k}tfnL; nfv aofnL; xhf/ tLg ;o 5ofgAa]xG5 .

c7rfnL; nfv rf}tL; xhf/ 5 ;o lqxQ/ = 48,34,673 xG5 .

cEof;

1. :yfgdfg tflnsfdf e/ / cIf/df nj]v M

-s_ 43,50,432

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps
4	3	5	0	4	3	2

lqrfnL; nfv krf; xhf/ rf/ ;o aQL;

-v_ 35,78,045 -u_ 36,48,810 -3_ 39,82,847

-a_ 44,87,627 -r_ 46,72,345 -5_ 48,02,212

2. ca'sdf nj]v M

-s_ 5QL; nfv lqof;L xhf/ kf"r ;o gf}

-v_ ;trfnL; nfv krxQ/ xhf/ 5 ;o ;f7L

-u_ aofnL; nfv t]0f; xhf/ kf"r ;o aof;L

-3_ krf; nfv ;t;6f7L xhf/ gf};o 5

2.2 -3_ k9, 5nkmn u/ / sfkLdf nj]v M

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps	
5	1	0	0	0	0	0	Psfpg nfv
5	9	0	0	0	0	0	pg;f7L nfv
6	0	0	0	0	0	0	;f7L nfv
6	9	0	0	0	0	0	pg;Q/L nfv
7	5	0	0	0	0	0	krxQ/ nfv
8	9	0	0	0	0	0	pgfga]nfv
9	9	0	0	0	0	0	pgf;o nfv

83,82,653 = lqof;L nfv aof;L xhf/ 5 ;o lqkg

= Eighty Three Lakh Eighty Two Thousand and Six Hundred Fifty Three

97,56,369 = ;Gtfgaa]nfv 5kGg xhf/ tlg;o pgG;Q/L

5kGg nfv ;Qf0; xhf/ gf}; o afx| = 56,27,912

aof;L nfv gf}xhf/ 5 ;o aQL; = 82,09,632

99,99,999 df **1** yKof]eg]**1,00,00,000** -Ps s/f8_ xG5 .

cEof;

1. pbfx/0fsf nflu lbOP h:t}u/L :yfgdfg tflnsfdf e/ / cIf/df nv]v M

-s_ 59,16,713

b; nfv	nfv	b; xhf/	xhf/	;o	b;	Ps
5	9	1	6	7	1	3

pgG;f7L nfv ;fx|xhf/ ;ft ;o tx|

= Fifty nine Lakh Sixteen Thousand and Seven Hundred Thirteen

-v_ 57,26,696 -u_ 64,46,931 -3_ 66,23,549 -a_ 72,39,302

-r_ 89,40,200 -5_ 92,51,339 -h_ 94,07,737 -a_ 97,38,392

2. ca'sdf nv]v M

-s_ afpGg nfv 5 xhf/ lqkGg = 52,06,053

-v_ lq;6fL nfv 5kGg xhf/ ;q

-u_ rfxQ/ nfv gf}xhf/ ;ft ;o ;Qf0;

-3_ c7f;L nfv krkGg xhf/ rf/ ;o rjfnL;

3. 50,00,000 b]v 60,00,000 ;Dd nfv–nfvdf a9fpb}nv] .

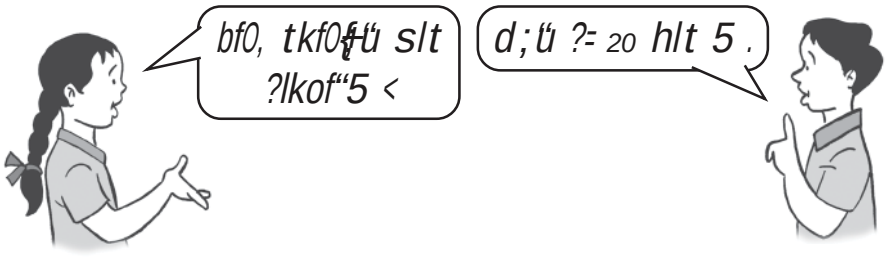
4. 30,00,000 b]v 90,00,000 ;Dd b; nfv–b; nfvdf a9fpb}nv] .

lzIf0f lgb]zg M

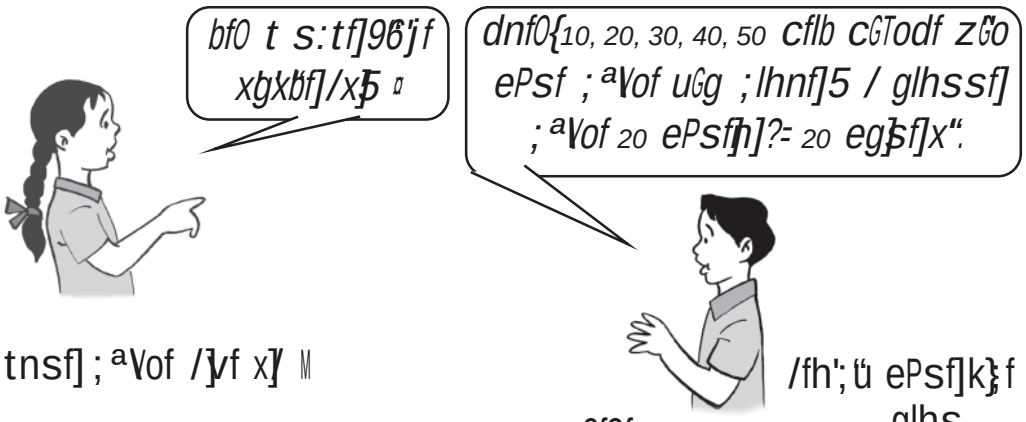
:yfgdfg tflnsfsf]kpf]u u/L Ps s/f8;Dd sa'vofsf]wf/0ff lbgxf]\. tL sa'vofx¿nf0{ ca'sdf cIf/df nv]g]cEof; ug{nufpgxf]\.

2.3 ;ª\ofx¿sf]zGofGt (Rounding off Numbers)

tLg cª\ssf];ª\ofnfO{glhssf];odf zGofGt



zLnfn]ug]{ x]/g\t/ uGbf hDdf ?= 19 /x]5 .



;ª\of/]vfdf 19 ;ª\of 20 sf]glhs 5 t/ 10 af6 w]}6f9f k/]5f]5 . o;/L 10, 20, 30, ... 100, 200, 300 ... cflb clGtddf zGo ePsf ;ª\ofnfO{n]vg]tl/sfnfO{ ;ª\ofx¿sf]zGofGt elgG5 .

glhssf]b;df zGofGt ul/Psf ;ª\ofx¿ M 10, 20, 30 ... 120, 150 ... 2350 cflb .

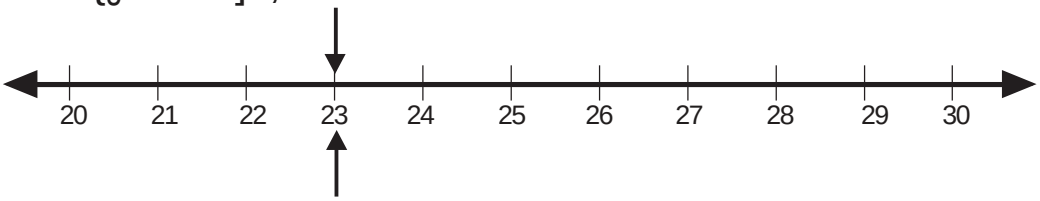
glhssf];odf zGofGt ul/Psf ;ª\ofx¿ M 100, 200 ... 2300 cflb .

lzIfOf lgb]{zg M

;ª\of/]vfsf]kbfy{ u/L glhssf]b; / ;odf zGofGt ug]{ tl/sfaf/]5nkmn u/fpgxf];\.

pbfx/0f 1

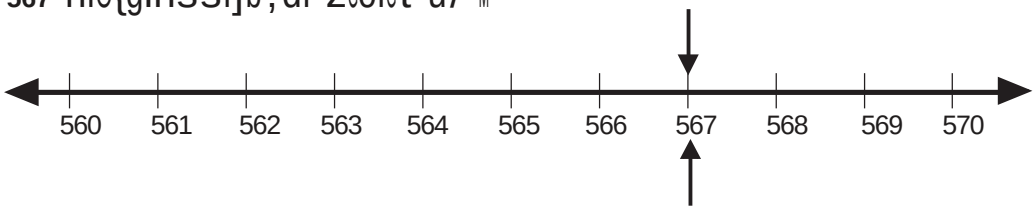
23 nf0{glhsssf]b;df z'Gof'Gt u/ M



23, 20 sf]glhsdf k5{. To;}n] 23 nf0{glhssf]b;df z'Gof'Gt ubf{ 20 x'G5 .

pbfx/0f 2

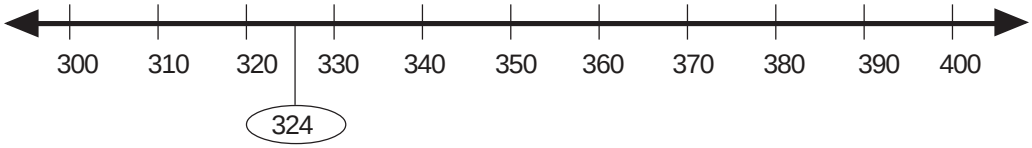
567 nf0{glhssf]b;df z'Gof'Gt u/ M



567, 570 sf]glhsdf k5{. To;}n] 567 nf0{glhssf]b;df z'Gof'Gt ubf{ 570 x'G5 .

pbfx/0f 3

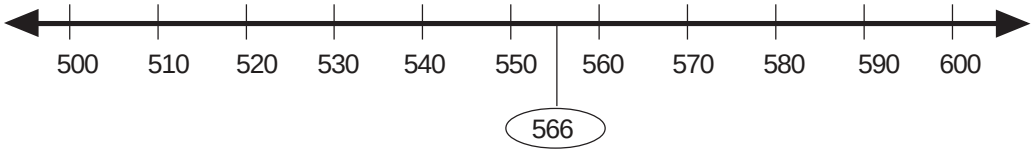
324 nf0{glhssf];odf z'Gof'Gt u/ M



324, 300 sf]glhsdf k5{. To;}n] 324 nf0{glhssf];odf z'Gof'Gt ubf{ 300 x'G5 .

pbfx/0f 4

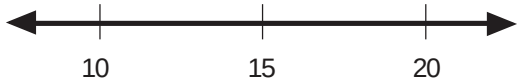
566 nf0{glhssf];odf z'Gof'Gt u/ M



566, 600 sf]glhsdf k5{. To;}n] 566 nf0{glhssf];odf z'Gof'Gt ubf{ 600 x'G5 .

pbfx/0f 5

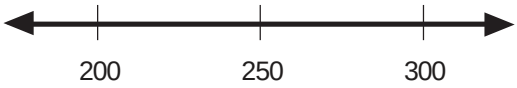
15 nf0{glhssf]b;df z'Gof'Gt u/ M



15, 10 / 20 sf]7ls a'rdf k5{. 15 nf0{glhssf]b;df z'Gof'Gt ubf{20 ug'{ rng 5 .

pbfx/0f 6

250 nf0{glhssf];odf z'Gof'Gt u/ M

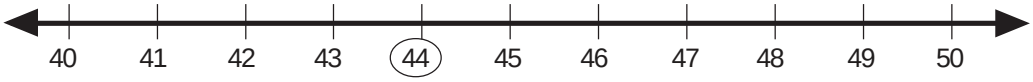


250, 200 / 300 sf]7ls a'rdf k5{. 250 nf0{glhssf];odf z'Gof'Gt ubf{300 ug'{ rng 5 .

cEof;

1. lb0Psf];a\vofnf0{glhssf]b;df z'Gof'Gt u/ M

-s_ 44



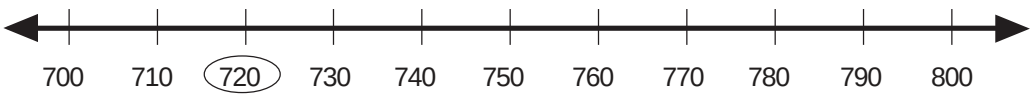
44 nf0{glhssf]b;df z'Gof'Gt ubf{40 x'G5 .

-v_ 16 -u_ 12 -3_ 125 -a_ 276

-r_ 561 -5_ 672

2. lb0Psf];a\vofnf0{glhssf];odf z'Gof'Gt u/ M

-s_ 720



720 nf0{glhssf];odf z'Gof'Gt ubf{700 x'G5 .

-v_ 390 -u_ 550 -3_ 450 -ª_ 1691

-r_ 6621 -5_ 505 -h_ 360 ls=ld= -´_ 570 ld=

-`_ 145 ;}ld=

3. lgDglnlvt lrq sf7df8f}af6 kf]v/f;Ddsf]b'/Lsf]xf]. sf7df8f}af6 kf]v/f, dlUnª, 8d];Ddsf]b'/L ´G8}sltslt ls=ld= xG5, glhssf]b;df z'Gofgt u/ M

204 ls=ld= 135 ls=ld= 108 ls=ld=

kf]v/f 8d] dlUnª sf7df8f}

2.4 ¿9 / ;ª5t ;ª\ofx¿ (Prime and Composite Numbers)

1 b]lv **20** ;Dd nx/}ldnfP/ n]v M

1	2	3	~~4~~	5	~~6~~	7	~~8~~	~~9~~	~~10~~
11	~~12~~	13	~~14~~	15	16	17	18	19	20

– ;ª\of 1 nfO{3]f nufpM .

– 2 nfO{5f8]/ 2 n]7\bfDd}efu hfg];ª\ofx¿nfO{sf6 . h:t}M ~~2~~, ~~4~~, ~~6~~, . . ._

– 3 nfO{5f8]/ 3 n]7\bfDd}efu hfg];ª\ofx¿nfO{sf6 . h:t}M ~~3~~, ~~6~~, ~~9~~, . . ._

– gsfl6Psf ;ª\ofx¿ ¿9 ;ª\ofx¿ xg\. o; ;ª\ofx¿ sgsg xg\/ o; ;ª\ofx¿nfO{sgsg ;ª\ofn]7\bfDd}efu hfG5, efu u/L x]/ .

1 / cfkmh]dfq 7\bfDd}efu hfg];ª\ofnfO{¿9 ;ª\of **(Prime Number)** elgG5, h:t}M **2, 3, 5, 7, 11, 13** cflb

1 / cfkmh]afx]s c¿ ;ª\ofn]klg 7\bfDd}efu hfg];ª\ofx¿nfO{ ;ª5t ;ª\of **(Composite Number)** elgG5, h:t}M **4, 6, 8, 9, 10** cflb .

cEof;

1. 1 b]lv 25 ;Ddsf]¿9 / ;ª\St ;ª\Vofx¿ sltslt cf6f 5g\ n]v .

2. 1 b]lv 50 ;Dd nx/}ldnfP/ n]v . dfly u/]ef} 1 sf6, 2 nfO{5f8]/ 2 n] 7\ofDd}efu hfg]/ 3 nfO{5f8]/ 3 n]klg 7\ofDd}efu hfg];ª\Vofx¿ sf6\}hfpm .

   5 n]efu hfg] To:t}7 n]klg efu hfg];ª\Vofx¿ sf6\}hfpm .

   - ¿9 ;ª\Vofx¿ sltcf6f 5g\/ s'gs'g x'g\ n]v .
   - ;ª\St ;ª\Vofx¿ sltcf6f 5g\/ s'gs'g x'g\ n]v .
   - 30 eGbf 7'hf / 50 eGbf ;fgf sltcf6f ¿9 ;ª\Vof /x]5g\<
   - 1 b]lv 50 ;Ddsf ¿9 ;ª\Vofdf 2 nfO{5f8]/ s'g}bO{cf6f ;ª\Vof hf]8 . s]hf]8kmn hf]/ ;ª\Vof 5 <

3. 27 / 37 df s'g ¿9 ;ª\Vof xf]/ s'g ;ª\St ;ª\Vof xf]< lsg <

lzIfOf lgb]zg m

*1 b]lv 50 ;Ddsf ;ª\Vof n]vPsf] rf6{sf]kbf{u u/L ¿9 / ;ª\St ;ª\Vof kQf nufpg] tl/sfsf]cEof; ug{nufpgxf]\. -1 nfO{¿9 jf ;ª\St ;ª\Vof s'g}klg dflgb]z_*

2.5 ¿9 u0fgv08x¿ (Prime Factors)

1 b]lv 99 ;Ddsf u0fgv08x¿

pbfx/0f 1

12 sf ¿9 u0fgv08x¿ s]s]xf]hfg\<

2 n]12 nfO{efu ubf{efukmn 6 xG5 .

2 n]6 nfO{efu ubf{efukmn 3 xG5 .

To;}n] 12 = 2 x 2 x 3 xG5 .

12 sf ¿9 u0fgv08x¿ 2 x 2 x 3 sf]¿kdf n]vg ;lsG5 .

2	12
2	6
	3

12
2 x 6
2 x 3

pbfx/0f 2

36 sf ¿9 u0fgv08x¿ s}s]xfnfg\<

2 n]36 nfO{efu ubf{efukmn 18 xG5 .

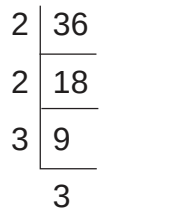
2 n]18 nfO{efu ubf{efukmn 9 xG5 .

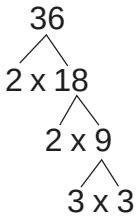
9 nfO{2 n]7\bfDd}efu nfUbg .

2 eGbf 7\hf]¿9 ;a\of 3 xf].

To;}h]3 n]efu ubf{efukmn 3 xG5 .

To;}h] 36 = 2 x 2 x 3 x 3 xG5 .





36 sf ¿9 u0fgv08x¿ 2 x 2 x 3 x 3 sf]¿kdf n\g ;lsG5 .

cEof;

1. ¿9 u0fgv08x¿ lgsfn M

-s_ 18 -v_ 24 -u_ 32 -3_ 48

-a_ 72 -r_ 91 -5_ 95 -h_ 64

lzIf0f lgb]zg M

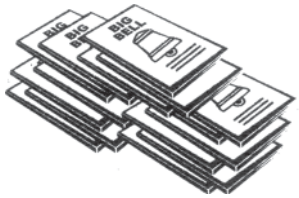
¿9 u0fgv08 lgsfNgsf nflu ¿9 ;a\ofn]efu u/L kQf nufpg] t\Yo :ki6 u/L 2, 3, 5, 7, 11, 13 cflbn]efu ug{kg]{;a\ofx¿sf]v08Ls/0f ug{l;sfO cEof; ug{nufpg].

kf7 3 ul0ftsf cfwf/e"t ljljofx¿
(Basic Operation in Mathematics)

3.1 36fp (Subtraction)

x]/, 5nkmn u/ / l;s M

?= 65,325 sf hDdf sfkLx¿



?= 36,476 sf lajfL ePsf sfkLx¿

?

af"Sl sfkLx¿

Pp6f sfkL agfpg]sf/vfgfn]Ps lbgdf ?= **65,325** a/fa/sf sfkLx¿ agfP5 / tLdWo]?= **36,476** sf sfkLx¿ lajfL u/]5 eg]hDdf slt ?lkof"sf sfkLx¿ af"Sl /x]xf]hfg\<

b; xhf/	xhf/	;o	b;	Ps
6	5	3	~~2~~ 1	~~5~~ 15
- 3	6	4	7	6
				9

;?df Ps :yfgsf]ca\saf6 Ps :yfgsf] ca\s 36fpgk5{. 5 af6 6 36fpg ;lsb}g . To;}n] 2 b;af6 1 b; ;fk6 lngk5{. Ps b; eg]sf] 10 Ps xf]. 10 Ps / 5 Ps hf8bf 15 Ps xG5 . ca 15 Psaf6 6 Ps 36fpbf 9 Ps af"Sl /xG5 .

		2	1	
6	5	~~3~~	~~2~~	~~5~~
- 3	6	4	7	6
			4	9

b;sf]:yfgdf /x]sf] 2 af6 1 b; ;fk6L u0;s]sfn]To; 7fpbf 1 b; dfq af"Sl / xG5 . 1 b;af6 7 b; 36fpg ;lsb}g . To;}n];osf] :yfgaf6 1 ;o ;fk6L lngk5{. Ps ;o eg]sf] 10 cfbf b; xG5 . 1 b; / 10 b; eg]sf] 11 b; xf]. ca 11 b;af6 7 b; 3fpbf 4 b; af"Sl /xG5 .

ca ;osf]:yfgdf 2 ;o dfq af‘sL /xbof]. 2 ;oaf6 4 ;o g36g]ePsfn] 5 xhf/af6 1 xhf/ ;fk6L lngk5{. 1 xhf/ eg]sf] 10 ;o xf]. 10 ;o / 2 ;o hf8bf 12 ;o x‘G5 . 12 ;oaf6 4 ;o 36fpb’f 8 ;o af‘sL /x‘G5 .

		12	11	15
	4	~~2~~	~~1~~	
6	~~5~~	~~3~~	~~2~~	~~5~~
-3	6	4	7	6
		8	4	9

xhf/sf]:yfgdf 4 xhf/ dfq af‘sL /xbof]. 4 xhf/af6 6 xhf/ 36fpg ;lsb’g . To;}n] 6 b; xhf/af6 1 b; xhf/ ;fk6 lngk5{. 10 xhf/ / 4 xhf/ hf8bf 14 xhf/ x‘G5 . 14 xhf/af6 6 xhf/ 36fpb’f 8 xhf/ af‘sL x‘G5 .

	14	12	11	15
5	~~4~~	~~2~~	~~1~~	
6	~~5~~	~~3~~	~~2~~	~~5~~
-3	6	4	7	6
	8	8	4	9

clG‘tddf b; xhf/sf]:yfgdf 5 b; xhf/ af‘sL /x‘G5 . 5 b; xhf/af6 3 b; xhf/ 36fpb’f 2 b; xhf/ af‘sL /x‘G5 .

	14	12	11	15
5	~~4~~	~~2~~	~~1~~	
~~6~~	~~5~~	~~3~~	~~2~~	~~5~~
-3	6	4	7	6
2	8	8	4	9

pbfx/0f 1

36fpm M

372568 — 284789

klxnf dflysf]pbfx/0fdf h:t}u/L 7f8f]¿kdf 36fcf}/ pQ/nf0{t]:f[u/L n]vf}.

		3	7	2	5 6 8
-	2	8	4	7	8 9
			8	7	7 9

372568 — 284789 = 87779

pQ/ ldn]sf]=gldn]sf] cfk}F hfRg] tl/sf

372568 af6 284789 36fpb’f 87779 cfof]. ca 87779 / 284789 hf8L x]/f}M

		8	7	7	7 9
+	2	8	4	7	8 9
		3	7	2	5 6 8

pQ/df 36fpgkg{]; a\of 284789 hf8bf 372568 g}cfof]. dflysf]36fp ldn]sf] /x]5 . o;/L lx;fa ldn]sf]=gldn]sf]yfxf kfpg ;lsG5 .

cEof;

lx;fa u/ M

1. b; xhf/ xhf/ ;o b; Ps

9	2	3	1	5
-7	4	5	7	6

2. b; xhf/ xhf/ ;o b; Ps

8	3	5	7	6
-4	5	3	9	6

3. 572897
-352890

4. 372954
-172868

5. 875436
-229758

6. 637546
-299679

lzIf0f lgbZg M

a9Ldf 6 c^s;Ddn]agfsf ;^Vofx¿af6 a9Ldf 6 c^s;Ddn]agfsf ;fk6L lngkg]
36fpsf yk ;d:ofx¿ agfP/ cEof; u/fpgxf]\.

3.2 36fp;DaGwL Jofjxfl/s ;d:ofx¿

k9 / 36fp l;s M

pbfx/0f **1**

kf]if;t ?= **28,538** lyof]. ?= **25,283** kg]{Pp6f 6]nlehg lsg]kl5 ca p;t slt ?lkof"afSL /xG5 xf]nf <

oxf" hDdf /sd = ?= 28,538
vr{u/]sf]/sd = ?= 25,283
afSL /sd = <

?= 28,538
– ?= 25,283
?= 3, 255

kf]if;t ?= 3,255 afSL /xG5 .

pbfx/0f 2

lzjfgLn] Pp6f 3/]h' pBf]u vf]lg] ljrf/ ul/5g\. To;sf nflu pgnf0{ ?= **1,68,539** cfjZos kg]{/x]5 t/ pgL;t\ ?= **1,59,847** dfq /x]5 eg]pgnf0{slt /sd gku eP5 <

oxf"; cfjZos hDdf /sd = ?= 1,68, 539

pgL;t\ ePsf]/sd = ?= 1,59,847

gku /sd = <

?= 1, 6 8, 5 3 9

– ?= 1, 5 9, 8 4 7

?= 8, 6 9 2

To;}n]gku /sd = ?= 8,692

cEof;

1. sfnf]h vftg;t\ ?= **1,75,000** lyof]. pgn]?= **1,20,775** kg]{Pp6f df6]/;f0sn lslg5g\eg]pgL;t\ slt ?lkof"af"sL /xG5 <
2. Pp6f gu/kflnsfsf]hDdf hg;a\of **3,58,238** /x]5 h;dWo]**1,90,789** hgf k?if /x]5g\eg]dlxnf slt hgf xf]nfg\<
3. jiff{sf]kl/jf/sf]jflif{s cfDbfgL ?= **2,10,000** 5 / jflif{s vr{?= **1,92,832** 5 eg]hDdf slt art x'G5 xf]nf <
4. Pp6f uf=lj=;= sf]jflif{s ah]6 ?= **9,00,000** dWo]?= **7,89,569** dfq vr{eP5 eg]slt /sd af"sL /xof]xf]nf <
5. s[0fn]nfv]sf];a\of **6,54,321** / l;h{gfn]nfv]sf];a\of **9,85,738** eP tL ;a\ofx¿sf]km/s lgsfn .
6. 36fp;DaGwL dfly lbOPsf h:t}6 ca\sn]ag]sf b0{cf6f ;d:ofx¿ agf0{ Pscfk;df ;f6k]/ u/L xn u/ .

lzIf0f lgb]{zg M

dfly lbOPsf h:t}36fp;DaGwL yk ;/n tyf Jofjxfl/s ;d:ofx¿ agf0{tyf agfpg nuf0{xn ug{nufpgxf];\.

3.3 u0fg (Multiplication)

tLg jf ;fe6bf a9L ca'ssf];a\vofnf0{tLg ca's;Ddsf];a\vofn]u0fg k9, 5nkmn u/ / l;s M

256 cf6f ;Gtnf	256 cf6f ;Gtnf	256 cf6f ;Gtnf	256 cf6f ;Gtnf

rf/}cf6f 8f]sfsf];Gtnf Ps}7fpdf ld;fpbf hDdf slt xG5 xf]nf <

hDdf ;Gtnf = 256 + 256 +256 +256 = 1024 cf6f

ca 256 nf0{4 n]u0fg u/L x]/f}M

256
x 4
1024

sg}klg ;a\vofnf0{4 k6s hf]8\g'eGg'/ Tof] ;a\vofnf0{4 n]u0fg ug{t Pp6}/x]5 ¤

pbfx/0f 1

u0fg u/ M

268
x23

– ;?df Pssf]:yfgsf] ca'sn]u0fg ug]{.

268
x 3
804

– k]l/ b;sf]:yfgsf]ca'sn] u0fg ug]{. b;sf]:yfgdf 2 5 . 2 b; egs]sf] 20 Ps xf]. To;}n]20 n]u0fg ug]{.

268
x20
5360

268
x23
804
+5360
6164

– To;kl5 b'j}u0fgkmnx¿ hf]8\/ /fVg].

pbfx/0f 2

u0fg u/ M

3728
x125

Pssf]:yfgsf]c^a\s 5 n]u0fg ubf{–

b;sf]:yfgsf]c^a\s 2 5 . 2 b; eg}sf]20 xf].
To;}n]20 n]u0fg ubf{–

;osf]:yfgsf]c^a\s 1 5 .
To;}n]1 ;on]u0fg ubf{–

3728
x5
18640

3728
x20
74560

3728
x100
372800

cGTodf tLg}cf}f u0fgk|mnx¿ nfO{hf]8]/ fVbf –

18640
74560
+372800
466000

5f}6s/Ldf ubf{–

3728
x125
18640
74560
+372800
466000

gf}6 M 10, 100 / 1000 n]sg}; ^\vofnfO{u0fg ubf{To; ; ^\vofsf]k5fl8 j|dz|M Pscf}6f, b0{cf}6f / tLgcf}6f (0,00 / 000) z'Go yk]k'U5, h:t} M 20 nfO{8 n]u0ff ug{kbf{8 n] 2 nfO{u0ff u/L u0fgk|mnsf]k5fl8 o yk]k'U5 .

cEof;

u0fg u/ M

1. 105
x 80

2. 370
x 27

3. 989
x 17

4. 3255
x 120

5. 4760
x 256

6. 3926
x 376

7. 7904 x 832

8. 9743 x 984

lzIf0f lgb]{zg M

;?df 56\bfP/ u0fg lj|ofsf]a9Lecfbf a9L cEof; u/fpgxf];\/ dfly lbOPsf h:tf yk ;d:ofx¿ agfO{cEof; u/fpgxf];\. To;kl5 5f}6s/Ldf u0fg ug{l;sfpgxf];\. u0fg l;sfpbf u0fg tflnsf kbf{u u/]/ l;sfpg ;lsG5 .

3.4 u0fg ;DaGwL Jofjxfl/s ;d:ofx¿

k9, 5nkmn u/ / l;s M

pbfx/0f 1

k]o}sdf 56 cf6f sf6Lx¿ ePsf 312 cf6f ;nf0{sf a66fdf hDdf slt sf6Lx¿ x6g\xf]nf <

oxf;"

Pp6f ;nf0{sf]a66fdf ePsf sf6Lx¿ = 56

hDdf ;nf0{sf a66f = 312

hDdf ;nf0{sf sf6L = ?

312 nf0{56 k6s bf]xf]=ofP/ hf8g' eg}sf]56 n]312 nf0{u0fg ug{xf].

```
  3 1 2
  x 5 6
-------
  1 8 7 2
1 5 6 0 0
-------
1 7 4 7 2
```

To;}n] hDdf 17472 cf6f ;nf0{sf sf6Lx¿ x6g\.

cEof;

1. Pp6f lstfadf 184 k[7x¿ 5g\eg]p:t}vfnsf 35 cf6f lstfadf hDdf slt k[7x¿ xf]nfg\<
2. Pp6f 6]nlehgsf]?= 25,500 k5{eg]120 cf6f p:t} vfnsf 6]nlehgnf0{ hDdf slt ?lkof"knf{<
3. Pp6f a66fdf 105 cf6f rsx¿ c6fp5g\eg]p:t}/ pq}503 cf6f a66fx¿df hDdf sltcf6f rsx¿ c6fpnfg\<
4. dfly lbOPsf h:t}2/2 cf6f zflAbs ;d:ofx¿ agfpm / ;fyL;fyLaLr ;f6k]/ u/L xn u/ .

lzIf0f lgbZg M

dflysf h:t}tLg jf ;fe6bf a9L c^ssf];^Vofnf0{a9Ldf tLg c^ssf];^Vofn]u0fg ugkg]{ ;/n Jofjxfl/s ;d:ofx¿ a9Le6bf a9L agfpg nuf0{;dfwfg ug]{cEof; u/fpgxf];\.

3.5 efu (Division)

k9, 5nkmn u/ / l;s M

768 cf6f ;Gtnfx¿ 96 hgf dflg;nf0{a/fa/ efu nufpbf Ps hgfsf]efudf sltcf6f knf{<

nuftf/ 36fpbf		oxL k|zgnf0{efu tl/sfn]x]/f}
768 -96	1 k6s	96 | 768 | 1 -96
672 -96	2 k6s	672 | 1 -96
576 -96	3 k6s	576 | 1 -96
480 -96	4 k6s	480 | 1 -96
384 -96	5 k6s	384 | 1 -96
288 -96	6 k6s	288 | 1 -96
192 -96	7 k6s	192 | 1 -96
96 -96	8 k6s	96 | 1 -96
0		0 |

o;/L, 768 af6 96 cf7 k6s 36fpg'egsf]768 nf0{96 efu nufpbf Pp6fsf]efudf 8 cf6f kg{xf]. cyjf 768 nf0{96 n]efu ubf{efukmn 8 cfp5 eGg'xf].

To;}n] 96)768(8
-768
0

ctM efu Pp6};aVofsf]nuftf/ 36fpsf]5f6f]¿k xf].

kf‘r c^\s;Ddsf];^\VoFnfO{bO{c^\ssf];^\Vofn]efu ug{-z]if g/xg]

k9, 5nkmn u/ / l;s M

17028 ÷ 36

efhs bO{c^\sf]5 . efHosf]klxnf]bO{c^\s dfq lnbf 17 xG5 . 17 efhs eGbf ;fgf]ePsfn]efHosf]klxnf tLg c^\s 170 nfO{efu u/f}.

```
    473
  ------
36 17028
 -  144
  ------
    262
  - 252
  ------
     108
   - 108
  ------
       0
```

efhs 36 nfO{glhssf]b;df n]Vbf 40 xG5 .

40 x 4 = 160, 170 sf]glhs xgfn]36 nfO{4 n]u0fg u/L x]/f}.

efu hfg];^\Vof ljrf/ ug{]tl/sf M

36 sf]3 n]170 sf]17 nfO{slt k6s efu hfG5, ljrf/ ug{]. kf‘r k6s hfG5 . ca 36 n]170 nfO{kf‘r k6s g} hfG5 jf 7Ls Ps k6s sd cyf{\rf/ k6s hfG5 .

hf‘rf}M 36 x 5 = 180 efu hfbfg .

36 x 4 = 144 efu hfG5 .

cfkmh]u/]sf]lx;fa ldNof]-ldn]g hfRg efukmnnfO{efhsn]u0fg u/f}M

```
    4 7 3
    x 3 6
  -------
    2 8 3 8   →   6 n]u0ff ubf{
+ 1 4 1 9 0   →   30 n]u0ff ubf{
  -------
  1 7 0 2 8   →   b'j}u0fgkmnnfO{hf]8\bf
```

473 x 36 = 17028 eof].

o;/L, efukmn x efhs = efHo ePsfn]xfdLn]u/]sf]lx;fa ldNof].

lzIf0f lgb]{zg M

pbfx/0f 1 df lbOPh:t}5nkmn u/L efu l;sfpg'xf];\/ cEof; kl:tsfdf 5f8]s/Ldf dfq n]Vg nufpg'xf];\.

cEof;

efu u/ / ldn]sf] =gldn]sf] hf"r M

1.	**540 ÷ 18**	2.	**1020 ÷ 15**	3.	**12805 ÷ 65**
4.	**10530 ÷ 78**	5.	**14790 ÷ 85**	6.	**44426 ÷97**

lzIf0f lgb]zg M

dfly lbOPsf h:t} kf"r c^ls;Ddsf ;^Vofn] lgMz]if efu hfg] lx;fax¿ a9Le"Gbf a9L agfP/ efu ug]{ / ldn]=gldn]sf] hfRg] cEof; u/fpgxf];\.

kf"r c^ls;Ddsf ;^Vofnf0{bO{c^lssf];^Vofn]efu ug]{-z]if /xg]

k9, 5nkmn u/ / efu l;s M

98194 nf0{74 n]efu u/L x]/f}M

efhs bO{c^lssf]5 . efHosf]klxnf]c^ls 98 efhs 74 e"Gbf 7"nf]ePsfn]98 nf0{74 n]efu u/f}. cgdfg u/f}74 nf0{glhssf]b;df n]vbf 70 x"G5 .

ca, 70 x ? = 98 sf]glhs x"G5 .

70 x 1 = 70

To;}n] 74 x 1 = 74

70 x ? = 241

70 x 3 = 210

To;}n] 74 x 3 = 222

70 x ? = 199 sf]glhs x"G5 .

To;}n] 74 x 2 = 148

k]l/, 70 x ? = 514 sf]glhs x"G5 .

70 x 7 = 490

To;}n] 74 x 7 = 518 7"nf]eof].

To;sf/0f, 74 x 6 = 444

ca, z]if = 70 /xb]f].

```
        1326
   74 ) 98194
      - 74
      -----
        241
      - 222
      -----
        199
      - 148
      -----
        514
      - 444
      -----
         70
```

o;/L zjf /xsf]cj:yfdf pQ/ ldnsf+gldnsf]hfRg efukmn / efhs u0fg u/L To;df zjf hf8L xf]f}M

1326 x 74 + 70 = 98194

efukmn x efhs ± zjf = efHo

olb, efhsn]efHonf0{lgMzjf efu hfbg eg]

efukmn x efhs ± zjf = efHo x'G5 .

pbfx/0f 1

efu u/ / ldnsf+gldnsf]hf'r M

8367 ÷ 96

hfRbf –

87 x 96 + 15

efu ubf{–

```
    87
  ------
96 8367
  - 768
  ------
    687
  - 672
  ------
     15 zjf
```

```
    87
  x 96
  ----
   522
+7830
  ----
  8352
  +15
  ----
  8367
```

efukmn x efhs + zjf = efHo ePsfn]lx;fa ldNof].

cEof;

efu u/ / ldnsf+gldnsf]hf'r M

1. **6370 ÷ 65**
2. **5765 ÷ 69**
3. **24050 ÷ 98**
4. **33504 ÷ 73**
5. **43200 ÷ 68**
6. **62950 ÷ 92**
7. **67012 ÷ 55**
8. **93216 ÷ 98**

lzIf0f lgb]zg M

dflysf h:tf yk ;d:ofx¿ ljBfyL{x¿nf0{agfpg nufpg]/ ;dfwfg ug]{ cEof; u/fpgxf];\.

kf‘r c^ls;Ddsf ;^Vofnf0{tLg c^lssf];^Vofn]efu ug{]

k9, 5nkmn u/ / efu l;s M

12850 nf0{**225** n]efu ubf{efukmn slt xf]nf <

57

225 12850

-1125

1600

-1575

25 z]if

- efhs 3 c^lssf]5 .
- efHosf]klxnf]tLg c^ls 128 efhs eGbf ;fgf]5 . To;}n]efHosf]klxnf]rf/ c^ls 1285 nf0{225 n]efu ug{k5{.

To;}n] efukmn = 57

z]if = 25

cgdfg u/f}M

225 x 4 = 900 ;fgf]eof]

225 x 5 = 1125

225 x 6 = 1350 7hf]eof]

k]l/ –

225 x ? = 1600

225 x 7 = 1575

ldn]-gldn]sf] hfRg –

efukmn x efhs ± z]if

57 x 225 + 25

= 12850

= efHo -ldNof]

225
x 57
1575
+ 11250
12825
+25
12850

pbfx/0f 1

efu u/ / hf‘r M

38590 ÷ 454

efu ubf{–

```
      85
454 38590
   – 3632
    2270
  – 2270
    0
```

hfRbf –

```
     454
   x 85
    2270
+ 36320
   38590
```

85 x 454 = 38590 ePsfn]ldNof].

To;}n]efuk|n = 85

cEof;

efu u/ / hf‘r M

1. 1947÷205
2. 3583÷527
3. 24888 ÷ 366
4. 80835 ÷ 951
5. 61835 ÷ 305
6. 93108 ÷ 472

3.6 efu;DaGwL Jofjxfl/s ;d:ofx¿

pbfx/0f 1

Pp6f em]nf agfpg]sf/vfgfn]Ps lbgdf **125** cf]6f em]nf tof/ kfg{;S5 eg] **29375** cf]6f em]nf tof/ ug{slt lbg nfUnf <

oxf“29375 nf0{125 efudf af8\gk5{.

```
     235
125 29375
  – 250
    437
  – 375
    625
  – 625
      0
```

o;/L 29375 cf]6f em]nf tof/ kfg{235 lbg nfUbf]/x]5 .

cEof;

1. 45 hgf dflg;nfO{ 5,625 cf6f ;Gtnf a/fa/ u/L af8bf k]o}sn]sltslt cf6f kfpnfg\<
2. Pp6f vf]/df 250 cf6f sV'/f c65g\eg] 4,750 sV'/fnfO{p:t}sltcf6f vf]/ rflxPnf <
3. Pp6f xjfO{hxfh Ps 306fdf 380 ls=ld= sf b/n]p85 eg] 15,200 ls=ld= ofqf ug{slt 306f p8ygk5{<
4. Pp6f ljBfnosf ljBfyL{¿n] 265 hgfaf6 hDdf ?= 5830 rGbf ;a}sng u/]. olb k]o}sn]a/fa/ ?lkof"rGbf lbPsf /x5g\eg]Ps hgfn]slt ?lkof" lbPsf]/x5 <
5. Ps hgf 6fOlk:6n]Ps ldg6df 65 cf6f zAb 6fOk ug{;S5 eg] 31,200 zAb 6fOk ug{slt ldg6 nfU5 <

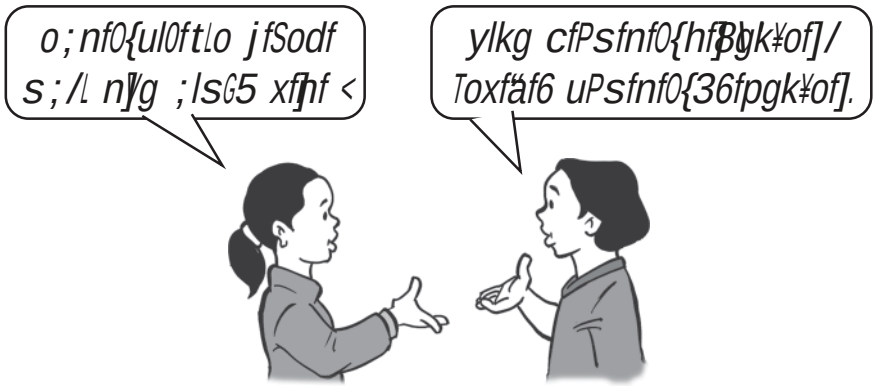
lzIfOf lgb]zg M

a9LeGbf a9L efu;DaGwL zflAbs ;d:ofx¿ ljBfyL{¿nfO{g}lgdf{0f ug{nufP/ ;dfwfg ug{nufpgxf];\.

3.7 ;/nLs/0f (Simplification)

k9, 5nkmn u/ / l;s M

Pp6f ¿vdf 5 cf6f r/fx¿ a;}sf /x5g\. Ps}l5gkl5 2 cf6f r/fx¿ p8]/ cfO{ ToxL ¿vdf a;}5g\. To;kl5 3 cf6f r/fx¿ p8]/ uP5g\. ca Toxf"sltcf6f r/fx¿ af"sL /x]xf]nfg\<



To;}n]

5 + 2 - 3

= 7 - 3 klxnf]hf]8 lrÅg ePsfn]hf]8 lrÅgsf]sfd u/]sf]xf].

= 4

4 cf6f r/fx¿ af“SL /x]5g\.

pbfx/0f 1

;/n u/ M

65-25 + 17 klxnf 36fp lrÅg ePsfn]36fp lrÅgsf]sfd u/]sf]/

= 40 + 17 To;kl5 hf]8 lrÅg ePsfn]hf]8]sf]xf].

= 57

pbfx/0f 2

60 af6 10 sf]5 u0ff 36fpbf slt xG5 <

60 - 10 x 5 ul0ftLo jfSodf n]V]sf]hf]8, 36fp / u0fg lrÅg ;dfj]z

= 60 - 50 ePsf]lx;fadf klxnf u0fgsf]/ To;kl5 hf]8 jf 36fpsf]

sfd ugk5{.

= 10

pbfx/0f 3

15 sf]tLg u0ffdf 7 hf8bf slt xG5 <

oxf"ul0ftLo jfSodf n]Vbf –

15 x 3 + 7

= 45 + 7

= 52

-klxnf u0fgsf]sfd u/]sf]/ To;kl5 hf8sf]sfd u/]sf]xf]._

pbfx/0f 4

;/n u/ M

(18+22) - 20

= 40 - 20

= 20

klxnf sf]7 - _ leqsf]ljrlof u/]sf]/ To;kl5 36fpsf]sfd u/]sf]xf].

pbfx/0f 5

;/n u/ M

70 + (8-2)

= 70 + 6

= 76

klxnf sf]7 - _ leqsf]ljrlof u/]sf]/ To;kl5 hf8sf]sfd u/]sf]xf].

o;/L ;/n ugkg]{;d:ofdf,

– klxnf sf]7sf]sfd ugk5{.

– To;kl5 u0fg lrÅgsf]sfd ugk5{.

– clg dfq hf8 cyjf 36fpsf]sfd ugk5{.

cEof;

1. ;/n u/ M

   (i) **15 - 4 + 5** (ii) **36 + 45 - 55**

   (iii) **54 x 6 - 48** (iv) **7 x 15 + 15**

   (v) **15 + (16 - 6)** (vi) **30 - (7+4)**

   (vii) **40 - (7-2)** (vii) **73 + (4+3)**

2. **9** nfO{**5** n]ug]/ cfpg]u0fgk|naf6 **45** 36fpb'f slt x'G5 <

3. l/df;'u **5** ?lkof"lyof]. cfdfn] pgnfO{pgL;'u ePsf] ?lkof'sf] **3** u0ff lbgePs5 eg]pgL;'u hDdf slt ?lkof"x'G5 <

4. ;fyuft;'u ?= **10,000** lyof]. olb p;n]?= **1,200** kg{]Pp6f afvf / ?= **7,300** sf] Pp6f ufO{lsg}5 eg]p;'u slt ?lkof"af'sL /x'G5 xf]nf <

lzIf0f lgb]zg M

dfly lbOPsf h:tf w]/}eGbf w]/};d:ofx¿ cfkm\n]lgdf{0f u/]/ tyf ljBfyL{x¿ nfO{lgdf{0f ug{ nufP/ xn ug{nufpgxf];\.

kf7 4

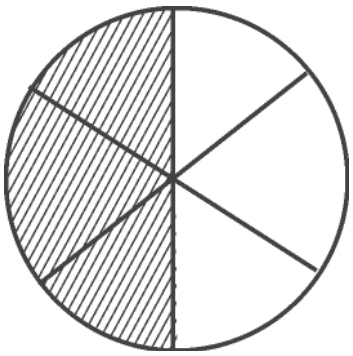
leGg, bzdnj, k|tzt / P]ss lgod

(Fraction, Decimal, Percentage and Unitary Method)

4.1 leGg

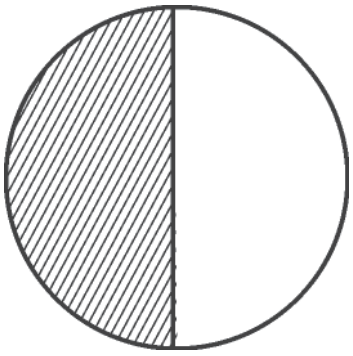
;dtNo leGgx¿

zLnf / /fhsf cfdfn]pgLx¿ nfO{bO{ cf6f a/fa/ ;fOhsf /f6Lx¿ vfg lbgeof]. zLnfn]/f6LnfO{6 a/fa/ efu nufOg\/ tLdWo]3 efu vfOg\.



/fhh]cfÇgf]efudf cfPsf]/f6LnfO{bO{ a/fa/ efu nufP/ 1 efu vfP . ca eg, s;n]a9L /f6L vfP5 <

bfof%sf]lrqdf x]/ . sg lrqdf /a\ufOPsf] efu a9L 5 <

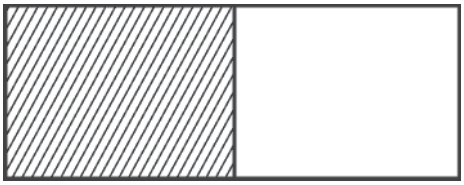


kf/bzL{sfuhdf /a\ufOPsf]efu 6}< u/ / csf]lrqsf]/a\ufOPsf]efu vK6\bfP/ x]/ . s]yfxf kfof}<

o;/L l;a\uf] j:t%sf]Ps efunfO{c¿ ljleGg kb}f/sf leGgn]hgfpg ;lsG5 .

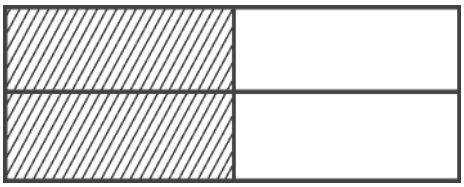
dflysf]lrqdf $\frac{3}{6}$ / $\frac{1}{2}$ a/fa/ leGg xg\.

tnsf]lrq x]/ . /a\ufOPsf]efun]sg leGgnfO{hgfp5 <



Tox\ lrqnf0{4 a/fa/ efudf af8]/ x]/ .

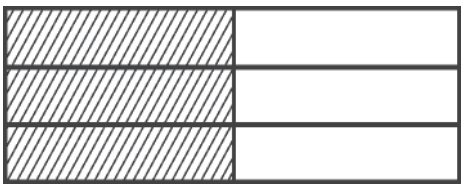
/^\ufOPsf]efun]sg leGgnf0{hgfp5 <



of] $\frac{1}{2}$ eGbf 7'hf]cyjf ;fgf]s]5 <

Tox\ lrqnf0{k|l/ 6 a/fa/ efu nufpb'bf s]xG5, x]/ .

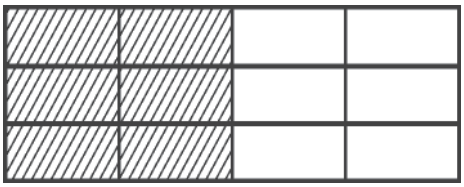
clxn]/^\ufOPsf]efun]slt hgfp5 <



of] $\frac{1}{2}$ eGbf 7'hf] ;fgf]cyjf a/fa/ s]5 <

ox\ lrqnf0{k|l/ 12 a/fa/ efu nuf0{x]/ .

clxn]/^\ufOPsf]efun]sg leGgnf0{hgfPsf]5 < s]of] $\frac{1}{2}$ eGbf 7'hf]cyjf ;fgf]5 <



dflysf rf/cf6}lrqdf /^\ufOPsf efu a/fa/ 5g\. To;}n] $\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{6}{12}$;a}n]Pp6} leGg $\frac{1}{2}$ hgfp5g\.

To;}n] $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{6}{12}$

o;/L Pp6f leGg;'u a/fa/ ePsf c¿ leGgx¿nf0{Tof]leGgsf];dtNo leGg elgG5 .

o:t}$\frac{1}{2}$ leGg;'u a/fa/ xg]c¿ b0{cf6f leGgx¿ eGg ;S5f}<

dflysf]pbfx/0fdf $\frac{1}{2}$;'u a/fa/ xg]c¿ 3 cf6f leGgx¿ lrqsf]d2taf6 agfof}.

ca Tox\ pbfx/0fnf0{csf{tl/sfn]agfpg k|bf;u/f}.

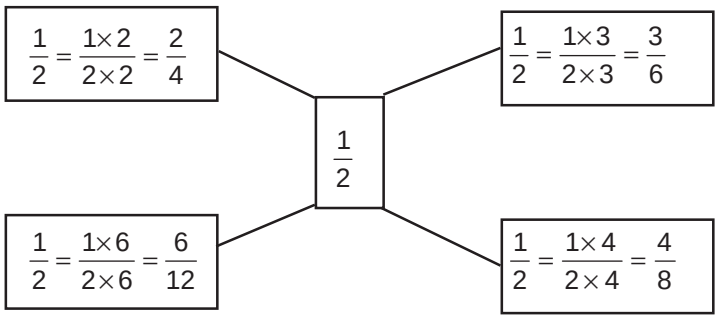
-s_ cª / x/ b'j}df 2 n]u0fg ubf{– -v_ cª / x/ b'j}df 3 n]u0fg ubf{–

$\frac{1}{2}=\frac{1\times 2}{2\times 2}=\frac{2}{4}$ $\frac{1}{2}=\frac{1\times 3}{2\times 3}=\frac{3}{6}$

-u_ cª / x/ b'j}df 6 n]u0fg ubf{–

$\frac{1}{2}=\frac{1\times 6}{2\times 6}=\frac{6}{12}$

To;}n] sg}klg leGgnf0{x/ / cª b'j}df Pp6}; ªVofn]u0ff ubf{cfpg]leGg lbOPsf]leGg;ü ;dtNo xG5 .

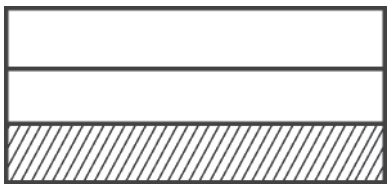


– ltdLn]o; lrqdf $\frac{1}{2}$ sf c¿ ;dtNo leGgsf xfüfx¿ yKg ;S5f}<

– olb ;S5f}eg]a9Ldf sltcf6f o:tf xfüfx¿ yKg ;S5f}<

cEof;

1. lbOPsf]lrqnf0{2 a/fa/ efu nufP/ cfpg]efusf];dtNo leGg n]lv M



2. vfnL 7fpüdf sg leGg n]lvgk5{< cfÇgf]sfkLdf ;f/]l n]lv M

-s_ $\frac{2}{3}=\frac{2\times 2}{3\times 2}=\square$ -v_ $\frac{3}{4}=\frac{3\times 4}{4\times 4}=\square$

-u_ $\frac{2}{5}=\frac{2\times 3}{5\times 3}=\square$ -3_ $\frac{3}{8}=\frac{3\times 5}{8\times 5}=\square$

3. k]o}s leGgsf bO{bO{cf6f ;dtNo leGg n]lv M

-s_ $\frac{2}{4}$ -v_ $\frac{2}{3}$ -u_ $\frac{3}{8}$ -3_ $\frac{2}{7}$ -a_ $\frac{5}{9}$ -r_ $\frac{1}{3}$ -5_ $\frac{2}{9}$

4. tn lbOPsf k]o}s leGgsf]x/df 12 ePsf]Pp6f ;dtNo leGg n]lv M

-s_ $\frac{1}{2}$ -v_ $\frac{2}{3}$ -u_ $\frac{1}{4}$ -3_ $\frac{5}{6}$ -a_ $\frac{3}{4}$

5. vfnL 7fpdf sg ;a\of n]lgknf{<

-s_ $\frac{7}{8}=\frac{\square}{64}$ -v_ $\frac{3}{11}=\frac{\square}{77}$ -u_ $\frac{7}{9}=\frac{21}{\square}$ -3_ $\frac{3}{8}=\frac{24}{\square}$

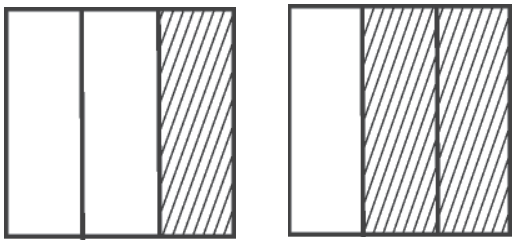
6. lbOPsf leGgx¿df ;dtNo leGg 56\bfpm M

-s_ $\frac{1}{4}$ / $\frac{6}{24}$ -v_ $\frac{2}{3}$ / $\frac{10}{5}$ -u_ $\frac{3}{4}$ / $\frac{18}{24}$

-3_ $\frac{5}{26}$ / $\frac{1}{5}$ -a_ $\frac{3}{8}$ / $\frac{12}{32}$ -r_ $\frac{15}{27}$ / $\frac{10}{18}$

leGgx¿sf]thgf (Comparison of Fractions)

sg lrqdf a9L 5fof kfl/Psf]5 < $\frac{1}{3}$ b]lvfOPsf]lrqdf eGbf $\frac{2}{3}$ b]lvfOPsf]lrqdf a9L 5fof 5 . To;f]eP sg]leGg 7\hf] xG5 <



$\frac{1}{3}$ $\frac{2}{3}$

olb x/ a/fa/ 5g\eg] hg leGgsf]cz+ a9L 5 Tof]leGg 7\hf]xG5 . ;dfg x/ ePsf leGgx¿ $\frac{1}{3}$ / $\frac{2}{3}$ df cz+ 2, cz+ 1 eGbf 7\hf]ePsfn] $\frac{2}{3}$ 7\hf]leGg xG5 . To;}n] $\frac{1}{3}$;fgf]/ $\frac{2}{3}$ 7\hf]xG5 .

$\frac{2}{7}, \frac{3}{7}$ / $\frac{4}{7}$ leGgx¿ dWo] ;fgf leGg 56\bfpg oL leGgx¿ hgfpg]lrq agfpgk5{. 5fof kf/]sf]efusf]cfwf/df ;fgf]56\bfPkl5 cGTodf ;dfg x/ ePsf leGgdf hg leGgsf]cz+ ;fgf]xG5, Tof]leGg klg ;fgf]xG5 . To;}n]

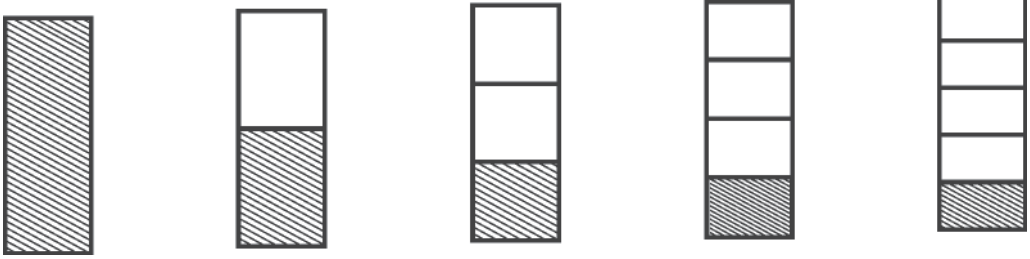
$\frac{2}{7}$ $\frac{3}{7}$ $\frac{4}{7}$

oxf;" ;a}eGbf ;fgf]leGg $\frac{2}{7}$ xf].

;a}eGbf 7hf]leGg $\frac{4}{7}$ xf].

$\frac{2}{7}, \frac{3}{7}$ / $\frac{4}{7}$ leGgnfO{ 7hfb]lv ;fgf]sf] jl|ddf n]Vbf $\frac{4}{7}, \frac{3}{7}$ / $\frac{2}{7}$ n]Vgk5{. 5fof kf/]sf]efunfO{x]/] klg of]k|6 xG5 .

tnsf lrqx¿ x]/ . oL lrqx¿af6 cz+ pxL ePsf]t/ x/ k|m/s ePsf leGgx¿df ;fgf]7hf]56\bfpm M



$\frac{1}{1}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$

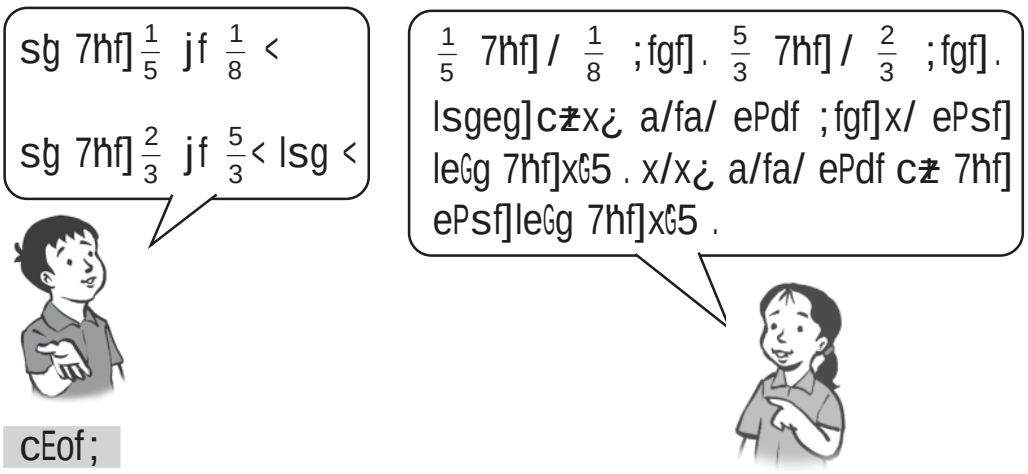
sg leGg hgfpg]lrqdf ;a}eGbf a9L 5fof kfl/Psf]5 <

;a}eGbf sd 5fof kfl/Psf]leGg sg xf]<

dflysf leGg lrqx¿ x]/] cz+ Ps}ePsf leGgx¿ bfHbf x/ ;fgf]xg]leGg 7hf]xG5 eGg ;lsG5 . hlthlt w]/}a/fa/ efudf Pp6f lrh afl8of] pltplt k]o]s efu ;fgf]xb}hfG5 .

dflysf] leGgnfO{ 7'hfb]lv ;fgfbdf jf|ddf ldnfpb"bf $\frac{1}{1},\frac{1}{2},\frac{1}{3},\frac{1}{4}$ / $\frac{1}{5}$ xG5 .

To:t} ;fgfb]lv 7'hf]sf] jf|ddf n]Vbf $\frac{1}{5},\frac{1}{4},\frac{1}{3},\frac{1}{2}$ / $\frac{1}{1}$ xG5 .



cEof;

1. tnsf leGgx¿df 7'hf] leGg 56\bfpm M

-s_ $\frac{6}{7},\frac{3}{7}$ -v_ $\frac{5}{9},\frac{7}{9}$ -u_ $\frac{3}{8},\frac{2}{8},\frac{7}{8}$

-3_ $\frac{3}{5},\frac{4}{5},\frac{2}{5}$ -a_ $\frac{2}{5},\frac{2}{7},\frac{2}{3}$ -r_ $\frac{3}{8},\frac{3}{5},\frac{3}{7}$

2. tnsf leGgx¿nfO{ 7'hfb]lv ;fgf] D`d jf|d ldnfP/ n]Vg M

-s_ $\frac{5}{7},\frac{4}{7}$ -v_ $\frac{3}{11},\frac{8}{11},\frac{5}{11}$ -u_ $\frac{5}{8},\frac{7}{8},\frac{6}{8}$

-3_ $\frac{13}{14},\frac{11}{14},\frac{12}{14}$ -a_ $\frac{5}{6},\frac{5}{9},\frac{5}{8}$ -r_ $\frac{9}{10},\frac{9}{13},\frac{9}{15}$

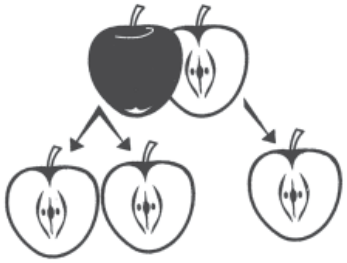
3. tnsf leGgx¿nfO{ ;fgfb]lv 7'hf]sf] jf|ddf ldnfP/ n]Vg M

-s_ $\frac{7}{9},\frac{6}{9},\frac{8}{9}$ -v_ $\frac{5}{7},\frac{4}{7},\frac{6}{7}$ -u_ $\frac{4}{6},\frac{3}{6},\frac{5}{6}$ -3_ $\frac{19}{21},\frac{16}{21},\frac{20}{21}$

-a_ $\frac{2}{7},\frac{2}{9},\frac{2}{3}$ -r_ $\frac{5}{9},\frac{5}{7},\frac{5}{6}$

ldl>t ;a\of **(Mixed Numbers)**

zLnfn]/fhhfO{elgg\ ‘d;ú Pp6f / cfwf :ofp 5 . o;nfO{Pp6};a\ofdf s;/L n]vg]xf]nf <’



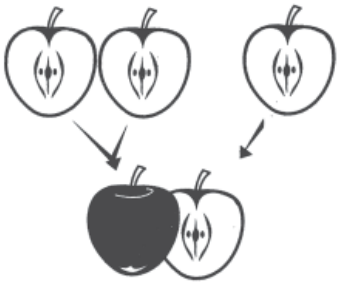
/fhh]eg] ‘To; l;a\uf] :ofpnfO{klg bO{cf6f cfwfdf af8]/ x]/ . ca hDdf sltcf6f cfwfx¿ xb\f /x]5g\<’

zLnfn]elgg\ ‘3 cf6f cfwf x6g5g\.’ pgn]o;nfO{ o;/L n]vg\ 3 cf6f cfwf $=3\times\frac{1}{2}=\frac{3}{2}$

æ of]t gof“lsl;dsf]leGg eof]lg . o;sf]t x/eGbf c+z 7\hf]5 .Æ /fhh]eg] æx/ eGbf c+z 7\hf]ePsf]leGgnfO{cgkoSt leGg (Improper Fraction) elgG5 .Æ

ltdLx¿ klg 5/5 cf6f cgkoSt leGgx¿ n]v .

ca $\frac{3}{2}$ df ePsf 3 cf6f cfwfdWo] bO{cf6f cfwfnfO{hf8]/ Pp6f l;a\uf]agfpg ;lsG5 / csf{]Pp6f cfwf af“sL /xG5 . bfof“sf]lrqdf x]bf{ 2 cf6f $\frac{1}{2}$:ofp a/fa/ 1 :ofp / Pp6f cfwf af“sL /xG5 .



o;nfO{ $\frac{3}{2}=1$ l;a\uf]/ $\frac{1}{2}=1+\frac{1}{2}=1\frac{1}{2}$ n]vg ;lsG5 .

o;/L Pp6f ;a\of l;a\uf]/ leGg ldl;Psf]5 eg]To; ;a\ofnfO{ldl>t ;a\of **(Mixed Number)** eG5g\.

o:t} $3\frac{1}{2}$ df sltcf6f l;a\uf]/ sltcf6f $\frac{1}{2}$ 5g\.

Psl5g ljrf/ u/ / ldl>t ;a\ofsf 5/5 cf6f pbfx/0fx¿ n]v . ldl>t ;a\ofnfO{ cgkoSt leGgdf / cgkoSt leGgnfO{ldl>t ;a\ofdf ¿kfGt/ ug{;lsG5 .

pbfx/0f 1

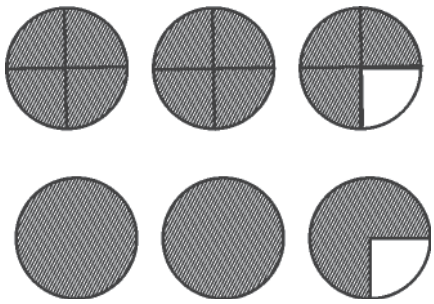
-s_ $\frac{11}{4}$ nfO{ldl>t ;aVofdf abn M

lrqdf $\frac{11}{4}$ eg]sf]11 cf6f $\frac{1}{4}$ efu xg\.

o;df 8 cf6f $\frac{1}{4} = 2$ cf6f l;aVuf]/

af“Sl3 cf6f $\frac{1}{4} = \frac{3}{4}$ xG5 .

To;}n] $\frac{11}{4} = 2\frac{3}{4}$ xG5 .



=

5f6f] tl/sf

$\frac{11}{4}$ df 11 nfO{4 n]efu ubf{–

$$4\overline{)11}\quad 2$$

8

3 z]if .

To;}n] $\frac{11}{4} = 2$ l;aVuf]+ $\frac{3}{4}$

$= 2\frac{3}{4}$ -bO{l;aVuf] tLgsf dlg rf/_

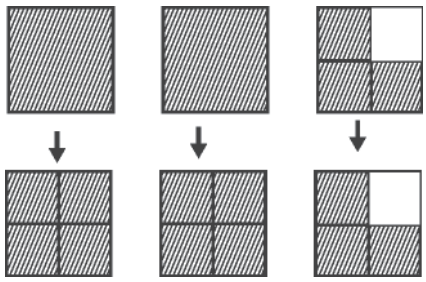
-v_ $2\frac{3}{4}$ nfO{cgkoSt leGgdf JoSt u/ M

oxf“ $\frac{3}{4}$ eg]sf]4 efudWo]3 efu xf].

To;}n] 2 cf6f l;aVuf] k]to]snfO{4/4 efudf af8Vbf hDdf 8 efu xG5 /

af“Sl3 efu hf8Vbf 11 cf6f $\frac{1}{4}$ efux¿

xG5g\. To;}n] $2\frac{3}{4} = \frac{11}{4}$ xG5 .



5f6f] tl/sf –

$$2\frac{3}{4} = \frac{2\times 4+3}{4} = \frac{8+3}{4} = \frac{11}{4}$$

l;a\uf] ;a\of / leGgsf]x/ u0fg ug]{ 1/ cfPsf] u0fgk|ndf c≠ hf]8\g]. clg To;sf] dlg lbOPsf] leGgsf]x/ g}n\g].

cEof;

1. tn lbOPsf cgkoSt leGgnfO{ldl>t ;a\ofdf n]v\ M

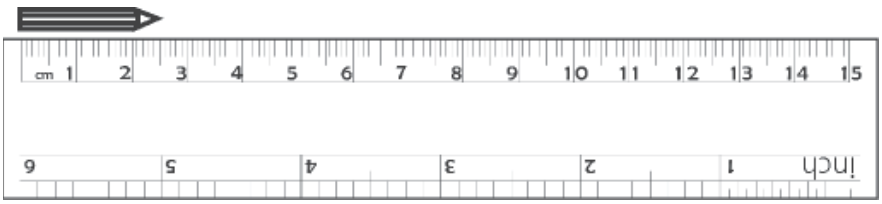
-s_ $\frac{15}{4}$ -v_ $\frac{13}{3}$ -u_ $\frac{11}{5}$ -3_ $\frac{16}{3}$ -a_ $\frac{21}{8}$

2. tn lbOPsf k]o]s ldl>t ;a\ofnfO{cgkoSt leGgdf ¿kfGt/ u/ M

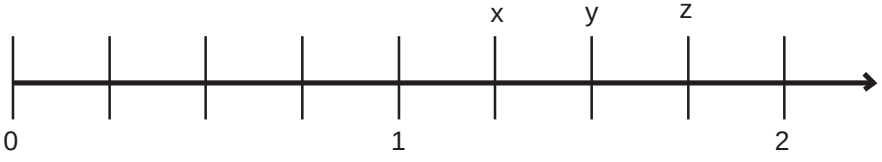
-s_ $12\frac{1}{2}$ -v_ $33\frac{1}{3}$ -u_ $15\frac{1}{4}$ -3_ $16\frac{3}{5}$ -a_ $9\frac{7}{6}$

3. tn 1 ;]ld= nfO{10 a/fa/ efu nufOPsf]5 . lrqdf l;;fsndsf]nDafO –

-s_ ldl>t ;a\ofdf / -v_ cgkoSt leGgdf slt xG5 <



4. ;a\of /]vfdf x, y / z sf]dfg slt 5, ldl>t ;a\of / cgkoSt leGg b'j}df lgsfn M



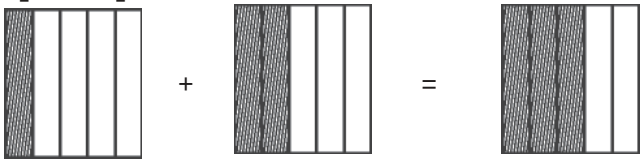
leGgsf ;fwf/0f ljljofx¿ (Fundamental Operations on Fraction)

k0ff{ns ;a\ofdf ;fwf/0f ljljofx¿ u/]h:t}leGgdf klg ljljofx¿ ug{;lsG5 .

leGgx¿sf]hf8 / 36fp

;dfg x/ leGgx¿sf]hf8 M

tnsf]lrqnf0{/fdf[t, ú x]/ . lrqdf leGgx¿ $\frac{1}{5}$ / $\frac{2}{5}$ nf0{hf8\bf cfpg]of]ukmn $\frac{3}{5}$ b]lvPsf]5 M



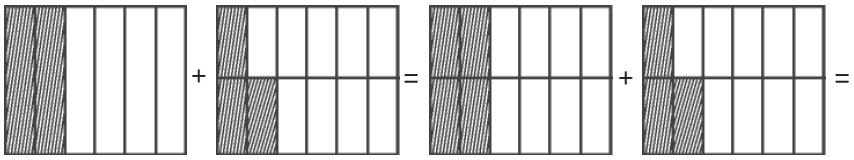
$\frac{1}{5}$ + $\frac{2}{5}$ = $\frac{3}{5}$

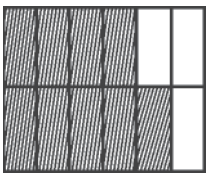
c;dfg x/ leGgsf]hf8 M

To;}n]

$\frac{1}{5}+\frac{2}{5}=\frac{1+2}{5}=\frac{3}{5}$ eof].

;dfg x/ leGgx¿sf]hf8 ubf{ cz+x¿sf]dfq of]ukmn lgsfn] k0f5 . x/rflx"pxL g}xG5 .





To;}n]

$\frac{2}{6}+\frac{3}{12}=\frac{2\times2}{6\times2}+\frac{3}{12}$

$=\frac{4}{12}+\frac{3}{12}$

$=\frac{4+3}{12}$

$=\frac{7}{12}$

$\frac{2}{6}$ nf0{klg x/df 12 agfpg cz+ / x/nf0{2 n]u0ff u/]sf]

lzIf0f lgb]zg M

c;dfg x/ ePsf leGgx¿sf]hf8 ubf{;aeGbf klxnf x/x¿ ;dfg agfpg]. -;dtNo leGg agfpg] To;k|5 dfq cz+x¿ hf8\ukg]{ s'/fsf af/]df k|z:t 5nkmn / cEof; u/fpgxf];\.

pbfx/0f 1

-s_ $\frac{3}{4}+\frac{1}{6}$

$=\frac{3\times3}{4\times3}+\frac{1\times2}{6\times2}$

$=\frac{9}{12}+\frac{2}{12}$

$=\frac{11}{12}$

4 sf ckj]Tox{¿ – 4, 8, 12, 16, 20, . . .

6 sf ckj]Tox{¿ – 6, 12, 18, 24, 30

oxf“4 / 6 af6 a/fa/ agfpg ;lsg];aeGbf ;fgf];a\of 12 xf].

To;}n] $\frac{3}{4}$ sf]cz± / x/ b'j}df 3 n]/ $\frac{1}{6}$ sf]cz± / x/ b'j}df 2 n]u0fg ug{k5{.

-s_ $\frac{6}{7}+\frac{5}{8}$

$=\frac{6\times8}{7\times8}+\frac{5\times7}{8\times7}$

$=\frac{48}{56}+\frac{35}{56}$

$=\frac{83}{56}$

$=1\frac{27}{56}$

7 sf ckj]Tox{¿ – 7, 14, 21, 28, 35, 42, 49, 56, 63, . . .

8 sf ckj]Tox{¿ – 8, 16, 24, 32, 40, 48, 56, 64, . . .

oxf“x/ 7 / 8 nf0{;dfg agfpg ;lsg];aeGbf ;fgf];a\of 56 xf].

To;}n] $\frac{6}{7}$ sf]cz± / x/ b'j}df 8 n]/ $\frac{5}{8}$ sf]cz± / x/ b'j}df 7 n]u0fg ug{k5{.

bO{cf6f c;dfg x/ leGgnf0{;dfg x/ agfpg klxnf]leGgsf]cz± / x/ b'j}nf0{ bf];f]leGgsf]x/n]/ bf];f]leGgsf]cz± / x/ b'j}nf0{klxnf]leGgsf]x/n]u0fg ug{;lsG5 .

pbfx/0f 2

lx;fa u/ M

-s_ $\frac{7}{8}-\frac{5}{8}$

$=\frac{7-5}{8}$

$=\frac{2}{8}$

$=\frac{1}{4}$ -;fgf]kbdf /fv]sf]

leGgx¿sf]hf6 u/]n:t}36fp ubf{klg ;dfg x/ ePdf cz±x¿sf]dfq 36fp ug]{ / c;dfg x/ ePdf x/nf0{klxnf ;dfg agfPkl5dfq cz±x¿sf]36fp ug{k5{.

-v_ $\frac{3}{4}-\frac{2}{5}$

$=\frac{3\times5}{4\times5}-\frac{2\times4}{5\times4}$ x/ Pp6}ePsf];dtNo leGg agfpbf

$=\frac{15}{20}-\frac{8}{20}$

$=\frac{15-8}{20}$

$=\frac{7}{20}$

pbfx/0f 4

$4\frac{1}{2}+3\frac{3}{4}$

$=\frac{4\times2+1}{2}+\frac{3\times4+3}{4}$ ——— ldl>t ;aVofnf0{cgkoSt leGgdf abNbf

$=\frac{9}{2}+\frac{15}{4}$

$=\frac{9\times4}{2\times4}+\frac{15\times2}{4\times2}$ ——— x/ Pp6}ePsf];dtNo leGg agfpbf

$=\frac{36}{8}+\frac{30}{8}$

$=\frac{36+30}{8}$

$=\frac{66}{8}$

$=\frac{33}{4}$ ——— ;fgf]kbdf nhfbf $4\overline{)\,33}^{\,8}$, -32, 1

$=8\frac{1}{4}$ ——— cgkoSt leGgnf0{ldl>t ;aVofdf nhfbf

pbfx/0f 5

$7\frac{2}{3}-5\frac{5}{6}$

$=\frac{7\times3+2}{3}-\frac{5\times6+5}{6}$ ——— ldl>t ;aVofnf0{cgko\t leGgdf abNbf

$=\frac{23}{3}-\frac{35}{6}$

$=\frac{23\times6}{3\times6}-\frac{35\times3}{6\times3}$ ——— x/ Pp6}ePsf] ;dtNo leGg agfpbf

$=\frac{138}{18}-\frac{105}{18}$

$=\frac{138-105}{18}$ ——— c#x¿sf]36fp ubf{

$=\frac{33}{18}$ ——— ;fgf]kbdf n}hfbf

$=\frac{11}{6}$

$=1\frac{5}{6}$ ——— cgko\t leGgnf0{ldl>t ;aVofdf n}hfbf

cEof;

1. lbOPsf]hf8f leGgx¿sf]x/ Pp6}agfpm M

-s_ $\frac{1}{2}$ / $\frac{3}{4}$ -v_ $\frac{4}{9}$ / $\frac{5}{6}$ -u_ $\frac{1}{4}$ / $\frac{3}{8}$ -3_ $\frac{2}{5}$ / $\frac{3}{7}$

2. lx;fa u/ M

-s_ $\frac{1}{4}+\frac{3}{8}$ -v_ $\frac{4}{5}+\frac{2}{15}$ -u_ $\frac{5}{9}+\frac{7}{18}$ -3_ $\frac{5}{6}+\frac{3}{8}$

-a_ $\frac{1}{6}+\frac{2}{7}$ -r_ $\frac{3}{10}+\frac{3}{4}$ -5_ $\frac{5}{9}+\frac{2}{7}$ -h_ $\frac{7}{11}+\frac{7}{12}$

3. lx;fa u/ M

-s_ $\frac{7}{9}-\frac{5}{9}$ -v_ $\frac{1}{5}-\frac{1}{10}$ -u_ $\frac{5}{6}-\frac{7}{12}$ -3_ $\frac{5}{6}-\frac{2}{5}$

-a_ $\frac{8}{15}-\frac{2}{5}$ -r_ $\frac{5}{8}-\frac{2}{6}$ -5_ $\frac{13}{18}-\frac{5}{12}$ -h_ $\frac{11}{15}-\frac{3}{10}$

4. lx;fa u/ M

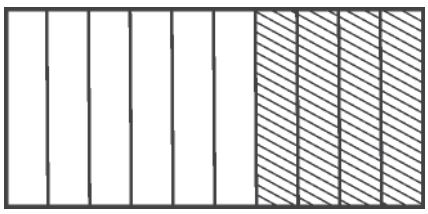
-s_ $5\frac{2}{3}+8\frac{1}{6}$ -v_ $3\frac{2}{5}+5\frac{4}{10}$ -u_ $6\frac{1}{9}+7\frac{1}{2}$ -3_ $4\frac{1}{2}+3\frac{1}{3}$

5. lx;fa u/ M

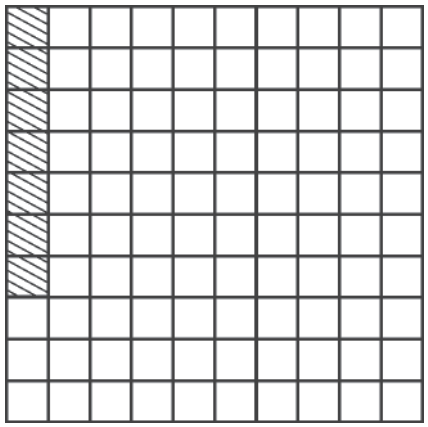
-s_ $3\frac{3}{5}-2\frac{1}{10}$ -v_ $8\frac{1}{2}-6\frac{3}{4}$ -u_ $10\frac{1}{3}-2\frac{1}{6}$ -3_ $8\frac{1}{4}-3\frac{2}{9}$

4.2 bzdnj ;aVof (Decimal Number)

oxf“cfotfsf/ lrqnf0{b; a/fa/ efudf afl8Psf] 5 . cfotsf] $\frac{4}{10}$ efudf 5fof kfl/Psf] 5 . o;nf0{ 4 b;fz elg5 . o;nf0{leGgdf $\frac{4}{10}$ / bzdnjdf 0.4 n]vG5 .



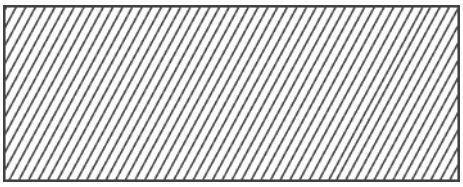
bfof“sf]juf{nf0{;o a/fa/ efudf afl8Psf] 5 . juf{sf] $\frac{7}{100}$ df 5fof kf/]sf]5 . o;nf0{ 7 ;ofz elg5 .

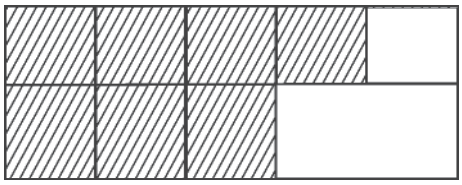


$\frac{7}{100}$ nf0{bzdnjdf 0.07 n]vG5 . To;}u/L,

$\frac{15}{100}$ nf0{bzdnjdf 0.15 n]vG5 .

$\frac{79}{100}$ nf0{bzdnjdf 0.79 n]vG5 .





dflysf] lrqdf Pp6f l;ªuf]cfot / bf];f]cfotsf] $\frac{7}{10}$ df 5fof kfl/Psf]5 .

oL b'j}nf0{Pp6}leGgdf $1\frac{7}{10}$ n]lvG5 .

$1\frac{7}{10}$ nf0{bzdnjdf 1.7 n]lvG5 .

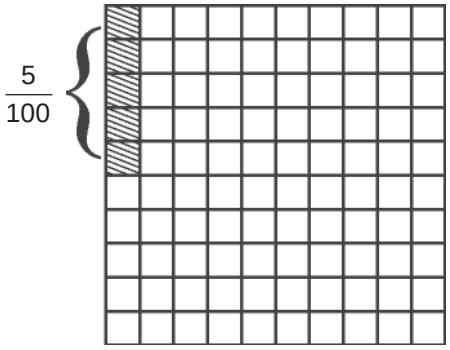
To;}u/L, $3\frac{7}{100}$ nf0{bzdnjdf 3.07 n]lvG5 .

$5\frac{59}{100}$ nf0{bzdnjdf 5.59 n]lvG5 .

lrqnf0{b; a/fa/ efudf afl8Psf]5 . 5fof kfl/Psf]efunf0{b0{tl/sfn]n]Vg ;lsG5 – $\frac{1}{5}$ cyjf $\frac{2}{10}$

To;}h] $\frac{1}{5} = \frac{2}{10} = 0.2$

lrqnf0{;o a/fa/ efudf af8]sf]5 . 5fof kf/]sf]efunf0{lgDgfg';f/ n]Vg ;lsG5 M



$\frac{5}{100}$

To;}h] $\frac{5}{100} = 0.05$

pbfx/0f 1

bzdnjdf nj]v M

-s_ $\frac{3}{5}$

$\frac{3}{5} = \frac{3\times 2}{5\times 2} = \frac{6}{10} = 0.6$

x/nf0{10 agfpg 2 n]u0ff u/]sf].

-v_ $\frac{2}{25}$

$\frac{7}{25} = \frac{7\times 4}{25\times 4} = \frac{28}{100} = 0.28$

x/nf0{100 agfpg .

cEof;

1. bzdnjdf nj]v M

-s_ $\frac{8}{10}$ -v_ $\frac{5}{10}$ -u_ $3\frac{6}{10}$ -3_ $9\frac{5}{10}$ -a_ $12\frac{7}{10}$

-r_ $\frac{89}{100}$ -5_ $\frac{45}{100}$ -h_ $\frac{9}{100}$ -´_ $8\frac{12}{100}$ -`_ $30\frac{8}{100}$

2. leGgdf nj]v M

-s_ 0.5 -v_ 0.9 -u_ 3.4 -3_ 8.2 -a_ 10.8

-r_ 0.37 -5_ 0.53 -h_ 0.77 -´_ 12.05 -`_ 18.68

3. bzdnjdf nj]v M

-s_ $\frac{2}{5}$ -v_ $\frac{4}{5}$ -u_ $\frac{1}{2}$ -3_ $\frac{7}{50}$ -a_ $\frac{13}{20}$

-r_ $\frac{1}{4}$ -5_ $\frac{4}{25}$ -h_ $\frac{3}{4}$ -´_ $\frac{9}{25}$ -`_ $\frac{15}{20}$

Ps, b;fz / ;ofz (Units, Tenths and Hundredths)

10 b;fz

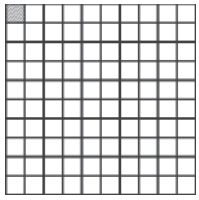
5fof kf/]sf]efu Ps k"/f (1)

5fof kf/]sf]efu 1 b;fz (0.1)

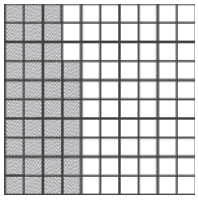
1 k0ff{s = 10 b;fz

5fof kf/]sf efu Ps ;ofz

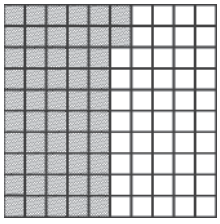
Ps ;ofz = 0.01



To;}u/L,



0.37



0.52

pbfx/0f 1

tnsf pbfx/0fx¿ k9 / l;s M

-s_ 2.3 -v_ 0.64

-s_ 2.3 = 2 k0ff{s / 3 b;fz = 20 b;fz + 3 b;fz = 23 b;fz = 2.0 + 0.3 = 2.3

-v_ 0.64 = 64 ;ofz = 60 ;ofz / 4 ;ofz = 0.6 + 0.04 = 0.64

pbfx/0f 2

tnsf pbfx/0f k9 / l;s M

-s_ 35 b;fz -v_ 26 ;ofz

-s_ 35 b;fz = 30 b;fz / 5 b;fz = 3 + 0.5 = 3.5

-v_ 26 ;ofz = 2 b;fz / 6 ;ofz = 0.2 + 0.06 = 0.26

cEof;

1. b;fzdf nfv M

   -s_ 3 Ps -v_ 7 Ps -u_ 4 Ps -3_ 9 Ps

2. pbfx/0f 1 df h:tfu/ M

   -s_ 1.8 -v_ 4.5 -u_ 3.7 -3_ 8.0 -a_ 0.46

   -r_ 0.08 -5_ 0.67 -h_ 1.37 -´_ 2.09 -`_ 4.84

3. pbfx/0f 2 df h:tfu/ M

   -s_ 52 b;fz -v_ 49 b;fz -u_ 30 b;fz -3_ 80 b;fz

   -a_ 45 ;ofz -r_ 76 ;ofz -5_ 28 ;ofz -h_ 88 ;ofz

4. 25.67 = 2 b;, 5 Ps, 6 b;fz / 7 ;ofz

   dflysf] tl/sfn] nfv M

   -s_ 5.69 -v_ 89.36 -u_ 152.87 -3_ 220.95

5. 4 b;, 6 Ps, 3 b;fz / 8 ;ofz = 46.38

   dflysf] tl/sfn] nfv M

   -s_ 7 b;, 8 Ps, 4 b;fz / 9 ;ofz

   -v_ 5 b;, 3 Ps, 5 b;fz / 7 ;ofz

   -u_ 8 b;, 0 Ps, 3 b;fz / 4 ;ofz

   -3_ 2 ;o, 0 b;, 6 Ps, 0 b;fz / 5 ;ofz

bzdnj ;aVofsf]hf8

pbfx/0f 1

hf8 M -s_ 0.4 -v_ 0.9

+ 0.3 + 0.8

-s_ 0.4 → 4 b;fz

+ 0.3 → + 3 b;fz

0.7 → 7 b;fz

-v_ 0.9 → 9 b;fz

+ 0.8 → + 8 b;fz

1.7 → 17 b;fz

pbfx/0f 2

hf8 M -s_ 0.43 -v_ 0.48

+ 0.35 + 0.29

-s_ 0.43 → 4 b;fz 3 ;ofz

+ 0.35 → + 3 b;fz 5 ;ofz

0.78 → 7 b;fz 8 ;ofz

-v_ 0.48 → 4 b;fz 8 ;ofz

+ 0.29 → + 2 b;fz 9 ;ofz

0.77 → 7 b;fz 7 ;ofz -17 ;ofz = 1 b;fz / 7 ;ofz_

cEof;

hf8 M

1. -s_ -v_ -u_ -3_

0.3 0.6 0.4 0.2

+ 0.2 + 0.2 + 0.2 + 0.5

2. -s_ 3.9 + 0.5 ——— -v_ 0.7 + 0.3 ——— -u_ 4.8 + 1.2 ——— -3_ 27.9 + 56.7 ———

3. -s_ 0.54 + 0.32 ——— -v_ 4.63 + 0.54 ——— -u_ 5.32 + 12.93 ——— -3_ 52.63 + 23.94 ———

-a_ 0.23 0.42 + 0.31 ——— -r_ 15.34 6.02 + 7.43 ——— -5_ 3.37 2.48 + 0.15 ——— -h_ 27.58 37.43 + 53.63 ———

-´_ 0.65 + 0.27 ——— -`_ 0.34 +0.58 ——— -6_ 2.29 + 6.16 ——— -7_ 9.86 + 5.69 ———

4. hf8 M

-s_ 6.72 + 9.18 + 3.29 -v_ 14.1 + 36.08 + 7.96

bzdnj ;aVofsf]36fp

pbfx/0f 1

36fpM M -s_ 0.9 – 0.3 ——— -v_ 8.3 – 0.6 ———

-s_ 0.9 → 9 b;fz
– 0.3 → 3 b;fz
———
0.6 → 6 b;fz

-v_ 8.3 → 8 k0ff{s / 3 b;fz → 7 k0ff{s / 13 b;fz
– 0.6 6 b;fz → – 0 k0ff{s / 6 b;fz
———
7.7 → 7 k0ff{s / 7 b;fz

pbfx/0f 2

36fp M -S_ 0.98 -V_ 0.64

– 0.45 – 0.28

-S_ 0.98 → 9 b;fz 8 ;ofz

– 0.45 → – 4 b;fz 5 ;ofz

0.53 5 b;fz 3 ;ofz

-V_ 0.64 → 6 b;fz 4 ;ofz → 5 b;fz / 14 ;ofz

– 0.28 → – 2 b;fz 8 ;ofz → – 2 b;fz / 8 ;ofz

0.36 → 3 b;fz 6 ;ofz

cEof;

36fp M

1. -S_ 0.9 -V_ 1.6 -U_ 8.6 -3_ 40.8

   – 0.4 – 0.4 – 0.6 – 23.6

   -a_ 9.3 -r_ 14.2 -5_ 64.5 -h_ 50.0

   – 0.8 – 3.7 – 59.7 – 34.6

2. -S_ 0.96 -V_ 6.98 -U_ 60.83 -3_ 0.54

   – 0.32 – 3.76 – 43.83 – 0.28

   -a_ 0.84 -r_ 8.82 -5_ 16.14 -h_ 28.20

   – 0.26 – 3.43 – 9.08 – 19.58

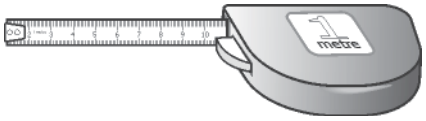
3. 3.06 eGbf 5.28 sltn]7hf]5 <
4. 21.69 eGbf 60 sltn]7hf]5 <
5. ;/n u/ M

   -S_ 36.08 + 7.8 – 14.1 -V_ 6.72 – 9.18 + 5.29

bzdnjsf]kbfl (Using Decimal)

100 k}f = 1 ?lkof“ 1 k}f = $\frac{1}{100}$?lkof“

tn Pp6f ld6/ 6]k b]lvf0Psf]5 –



o;df 1 ld6/nf0{100 ;]ld= df efu nuf0Psf]5 . ltdLx¿ klg o:t}6]k vf]h]/ x]/ .

100 ;]ld= = 1 ld=

1 ;]ld= = 1 ld= sf];ofª

1 ;]ld= = $\frac{1}{100}$ ld=

pbfx/0f 1

?lkof“df n]lv M -s_ 42 k}f -v_ ?= 6 / 63 k}f

-s_ 42 k}f = ?= $\frac{42}{100}$ = ?= 0.42

-v_ ?= 6 / 63 k}f = ?= $6\frac{63}{100}$ = ?= 6.63

pbfx/0f 2

k}fdf n]lv M

-s_ ?= 0.09 -v_ ?= 0.68

-s_ ?= 0.09 = ?= 0.09 x 100 k}f = 9.00 k}f = 9 k}f

-v_ ?= 0.68 = ?= 0.68 x 100 k}f = 68 k}f

pbfx/0f 3

ld6/df n]v M -s_ 37 ;]ld= -v_ 7 ld= / 25 ;]ld=

-s_ 37 ;]ld= = $\frac{37}{100}$ ld= = 0.37 ld=

-v_ 7 ld= 25 ;]ld= = 7 ld= ± $\frac{25}{100}$ ld= = 7.25 ld=

pbfx/0f 4

-s_ ;]ld= df n]v M 0.53 ld=

-v_ ld= / ;]ld= df n]v M 5.63 ld=

-s_ 0.53 ld= = 0.53 x 100 ;]ld= = 53 ;]ld=

-v_ 5.63 ld= = 5 ld= + 0.63 ld= = 5 ld= + 0.63 x 100 ;]ld=

= 5 ld= + 63 ;]ld= = 5 ld= 63 ;]ld=

cEof;

1. ?lkof"df n]v M

   -s_ 24 k}f -v_ 93 k}f -u_ 7 k}f

   -3_ ?= 5 / 87 k}f -ª_ ?= 8 / 75 k}f -h_ ?= 20 / 80 k}f

2. ?lkof"/ k}fdf n]v M

   -s_ ?= 0.56 -v_ 0.50 -u_ ?= 0.09 -3_ ?= 0.83

   -ª_ ?= 8.50 -r_ ?= 12.25 -5_ ?= 3.08 -h_ ?= 35.23

3. ld6/df n]v M

   -s_ 32 ;]ld= -v_ 8 ;]ld= -u_ 95 ;]ld=

   -3_ 8 ld= 45 ;]ld= -ª_ 25 ld= 28 ;]ld= -r_ 65 ld= 29 ;]ld=

4. ld= / ;]ld= df n]v M

-s_ 0.87 ld= -v_ 0.6 ld= -u_ 5.50 ld= -3_ 9.73 ld=

-a_ 5.60 ld= -r_ 25.09 ld= -5_ 3.65 ld= -h_ 8.38 ld=

5. ?lkof“/ k}fdf n]v M

-s_ 62 k} ± ?= 3.92 + ?= 3.48 + 8 k}

-v_ ?= 3.65 + 68 k} ± ?= 1.32 + 15 k}

-u_ ?= 8.89 + 9 k} ± ?= 4.86 + ?= 7.79

-3_ ?= 0.69 + ?= 3.69 + 50 k} ± ?= 18.36

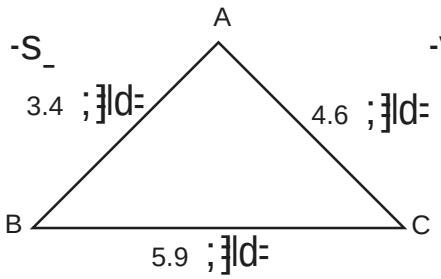
6. ld= / ;]ld= df n]v M

-s_ 2.41 ld= + 6.0 ld= + 0.73 ld= + 22 ;]ld=

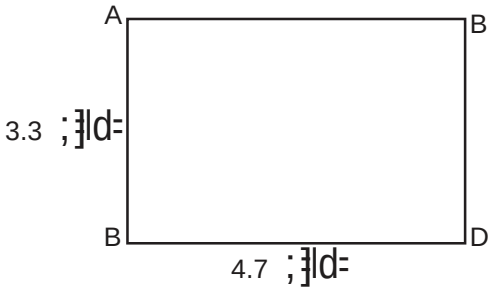
-v_ 72 ;]ld= + 8 ;]ld= + 27.45 ld= + 26 ld=

7. tnsf k]o}s lrqsf]kl/lw -3]/f_ sf]hDdf gfk lgsfn M

-s_



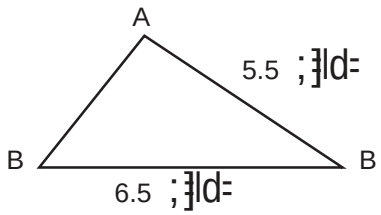
-v_



8. Pp6f ?= 3.45 kg{sfkL lsg]/ /fhh]?= 5 sf]gf6 k;n]hfO{lbP eg]pgn]slt lkmtf{kfp5g\<

9. ?= 5.25 sf]sfkL / ?= 1.75 sf]l;;fsnd lsGbf ?= 10 df slt art xG5 <

10.



o; lqehsf]kl/lwsf]3]/f 16.5 ;]ld= 5 eg]AB slt nfdf]xf]nf <

11. A ——————————— B
C ——————————— D

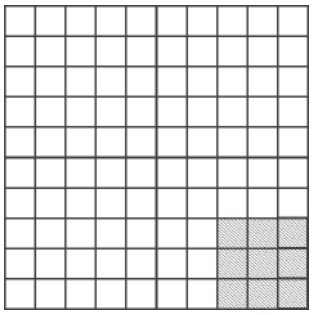
AB / CD nfO{ ;]ld=df gfk . b'j} hf]8bf slt nfdf]/]vfv08 aG5 xf]nf < AB eGbf CD slt ;]ld= n]nfdf]/x]5 <

12. P ——————— Q
R ——————— S

RS = 4.7 ;]ld= 5 . RS eGbf PQ = 2.3 ;]ld= 5f6f] 5 . PQ sf] gfk slt /x]5, ?n/n]ggfk\sg lgsfn .

4.3 k|tzt (Percentage)

leGg ;a\ofx¿sf ljleGg ¿kfGt/dWo] k|tzt Pp6f xf]. ;ú}sf] lrqdf 5fof kfl/Psf]efun]slt hgfp5 <



k'/f lrqnfO{100 a/fa/ efu nufOPsf]5 / To;dWo]9 efudf 5fof kfl/Psf]5 . To;}n]/a\ufOPsf]efu $= \frac{9}{100} = 0.09$ xG5 .

oxf;" $\frac{9}{100}$ / 0.09 n]100 efudWo]9 efunfO{ab\mfp5g\.

olb leGgsf]x/ 100 5 eg]leGgsf]cª\n];o efudWo]slt efu lnPsf]/x]5 eGg]hgfp5 . x/ 100 ePsf]o:tf]leGgsf]cª\nfO{k|tzt eG5g\. k|tzt hgfpg '%' lrÅg kb{5 ul/G5 .

dflysf]lrqdf $\frac{9}{100}$ efu /a\ufOPsf]5 / o;nfO{9% elgG5 . 9% n]k|lt ;odf gf} eGg]hgfp5 .

leGgnfO{k|tztdf ab\Nbf 100 n]uPfg u/L k|tzt lrÅg /fVgk5{ h:t} $\frac{9}{100} \times 100\% = 90\%$

cEof;

1. tn lbOPsf k]o]s leGgnfO{k|tzt (%) df n]v M

-s_ $\frac{5}{100}$ -v_ $\frac{17}{100}$ -u_ $\frac{38}{100}$ -3_ $\frac{65}{100}$

2. tn lbOPsf k]o]s leGgsf]x/df 100 agfO{k|tztdf n]v M

-s_ $\frac{3}{4}$ -v_ $\frac{1}{2}$ -u_ $1\frac{1}{2}$ -3_ $\frac{9}{10}$ -a_ $\frac{12}{25}$

3. 5% n] $\frac{5}{100}$ hgfp5 . To;}u/L tnsf k|tztn]hgfpg]leGg n]v M

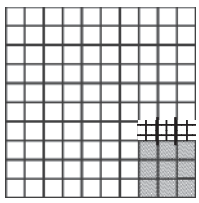
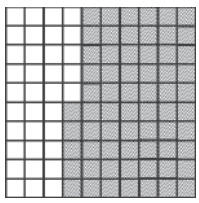
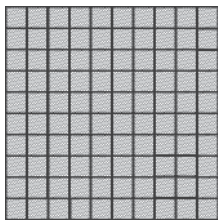
-s_ 3% -v_ 13% -u_ 55% -3_ 115% -a_ 63%

4. tn lbOPsf k]o]s bzdnjnfO{k|tztdf abn M

-s_ 0.33 -v_ 0.15 -u_ 0.10 -3_ 0.08 -a_ 1.5

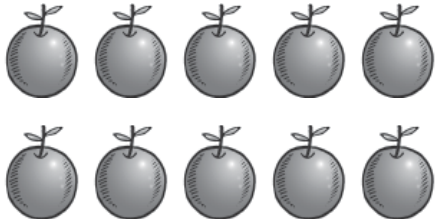
5. lbOPsf lrqdf 5fof kfl/Psf k]o]s efunfO{klxn]leGgdf n]v / kl5 % df nfpm M

-s_ -v_ -u_

6. Pp6f k/LIffdf 10 cf6f kZg ;fwPsf]/x5 . To;dWo]Pp6f kZg ufx]/x5 . hDdf kZgdf slt efu ufx]vfnsf]kZg /x5, leGgdf n]v . ca leGgsf] x/nfO{100 agfO{k|tztdf n]v .

4.4 P]ss lgod (Unitary Method)



/fhh]1 cf6f ;Gtnf lsGbf ?= 2 lt/]. 10 cf6f ;Gtnfsf]dNo s;/L yfxf kfpg ;lsPnf < Pp6f ;Gtnfsf dNoaf6 10 cf6f ;Gtnfsf]dfh lgsfNg' kbf{;Gtnfsf];aVofnfO{2 n]uGgk5{.

10 x ?= 2 = ?= 20

ca oxL k|ZgnfO{csf{tl/sfn];fy rf}–

/fhh]10 cf6f ;Gtnf ?= 20 lt/] lsg5g\. pgn]Pp6f ;Gtnfnf0{sltsf b/n] lsg5sf /x5g\< j:t'sf]hDdf dfhnfO{;aVofn]efu u/L x/]f}t, s]xbf]/x5 <

$$10\overline{)20}\ \begin{array}{l}2\\ \underline{20}\\ x\end{array}$$

To;}n] Pp6f ;Gtnfsf]?= 2 kg{eof].

o;/L Ps}kl5sf/sf w/}j:t'sf]dNo yfxf kfPdf hDdf dNonfO{j:t'sf];aVofn] efu u/] Pp6f j:t'sf]dNo lgsfln6 5 . o;nfO{PsfO dNo elg6 5 . To;}u/L, Pp6f j:t'sf]dNo yfxf kfPdf s]xL j:t'sf]dNo yfxf kfpg j:t'sf];aVofnfO{ Pp6f j:t'sf]dNon]u0fg ug{k5{.

cEof;

1. Pp6f cfksf]?= **3** k5{eg]**15** cf6f cfksf]slt knf{<
2. Ps bhg sfkLsf]?= **60** k5{eg]**12** bhg sfkLsf]slt knf{<
3. Ps bhg l;;fsndsf]?= **24** k5{eg]**1** cf6f l;;fsndsf]slt knf{<
4. **2** cf6f ;f8L lsg] /d]zn];fxhLnfO{?= **1,600** lbP . Pp6f ;f8Lsf]dfh slt /x5 <
5. **25** cf6f lstfasf]dfh ?= **300** k5{eg]Pp6f lstfasf]dNo slt knf{<
6. **5** hgf dflg;n]**15** cf6f ;df]f a/fa/ ;aVofdf vfP5g\ eg]Ps hgf dflg;n]slt cf6f ;df]f vfof]xfhf <

lzIf0f lgb]zg M
oxf"lb0Ph:t}yk ;d:ofx¿ cfkm\h]agfP/ jf ljBfyL{x¿nfO{agfpg nufP/ ;dfwfg lgsfNg]cEof; ug{nufpgxf]\.

kf7 5

;do, dbf / gfktf}n

(Time, Money and Measurement)

5.1 lbg, xKtf, dlxgf / jif{

tnsf]leQ}kfqf]x]/ / ;f]wPsf k|fgx¿dfly 5nkmn u/ M

sflQs						ljjfld ;fdfGt\@)^%
cfOtaf/	;fdaf/	da\unaf/	awaf/	laxLaf/	z'jfaf/	zlgaf/
					!	@
#	$	%	^	&	*	(
!)	!!	!@	!#	!$	!%	!^
!&	!*	!(	@)	@!	@@	@#
@$	@%	@^	@&	@*	@(	#)

-s_ of]sg dlxgfsf]Sofn}8/ xf]<

-v_ Ps xKtfdf slt lbg xG5g\< tL s}]xg\<

-u_ of]dlxgfel/df hDdf slt lbg 5g\<

-3_ s] ;a}dlxgfx¿df a/fa/ lbg xG5g\< Ps jif{sf] Sofn}8/ x]/] k|of}s dlxgfdf sltslt lbgx¿ 5g\ kQf nufO{eg .

lzIfOf lgbZg M

jf:tljs Sofn}8/ slffdf NofO{To;df n}vPsf ljleGg ;'rgfx¿sf af/}df 5nkmn u/fpgxf]\.

lbg, xKtf, dlxgf / jif{sf] ;DaGw

tnsf] tflnsf x]/ / ;dosf ;DaGwx¿ l;s M

24 306f = 1 lbg

7 lbg = 1 xKtf

30 lbg = 1 dlxgf

12 dlxgf = 1 jif{

lbg / xKtfsf] ¿kfGt/

pbfx/0f 1

25 lbgnf0{xKtf / lbgdf abn M

7 lbgsf]1 xKtf xg]xgfn]lbgnf0{7 n]efu ubf{lbg xKtfdf ¿kfGt/ xG5 .

efu u/L x]/f}M

$$7\overline{)\,25}\;\;3$$
$$-\,21$$
$$4\ \text{lbg}$$

ctM 25 lbg = 3 xKtf 4 lbg

lbg / dlxgfsf] ¿kfGt/

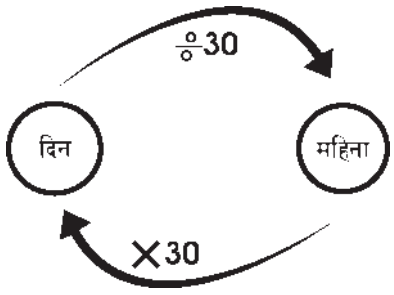
;a}dlxgfdf 30 lbg xb\g t/ df6fdf6L ¿kdf 1 dlxgfdf 30 lbg dfg]/ lx;fa ug{ ul/G5 . 2 dlxgfdf slt lbg xG5 <

1 dlxgf = 30 lbg

2 dlxgf = 30 x 2 lbg = 60 lbg

ca eGg ;S5f} 60 lbgsf] slt dlxgf xG5 <

s;/L yfxf kfpg]<



lbgnf0{dlxgfdf abNg 30 n]efu ug{k5{.

pbfx/0f 2

250 lbgsf]slt dlxgf xG5 <

250 lbgnfO{30 n]efu u/f}M

```
      8
   ------
30 ) 250
     240
   -----
      10
```

dflysf]lx;fa x]bf{xfdLnfO{yfxf eof]ls 250 lbg = 8 dlxgf 10 lbg xG5 .

dlxgf / jif{sf]¿kfGt/

1 jif{df 12 dlxgf xG5 eg]2 jif{df 2 x 12 dlxgf = 24 dlxgf xG5 . oxf"jif{nfO{ dlxgfdf abNg 12 n]u0ff u¥of}. ca, dlxgfnfO{jif{df abNg s]ugk{knf{<

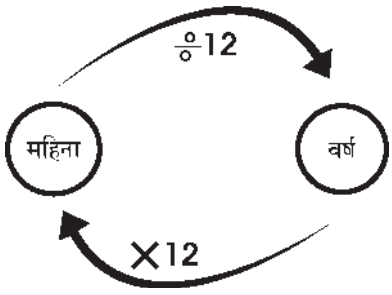
dlxgfnfO{jif{df ¿kfGt/ ug{12 n]efu ugk{5{.

pbfx/0f 1

124 dlxgfsf]slt jif{xG5 <

124 dlxgfnfO{12 n]efu u/L x]/f}M

```
     10 jif{
   ------
12 ) 124
     12
   -----
      04 dlxgf
```



To;}n] 124 dlxgf = 10 jif{4 dlxgf xG5 .

lbg / jif{

x]/, k9 / l;s M

h]7					ljjfld ;fwf\@)^%	
cf0taf/	;fdlaf/	d^\unaf/	awaf/	laxLaf/	z'jfaf/	zlgaf/
			!	@	#	$
%	^	&	*	(	!)	!!
!@	!#	!$	!%	!^	!&	!*
!(	@)	@!	@@	@#	@$	@%
@^	@&	@*	@(	#)	#!	

dflysf]leQ]kfqf]2065 ;fn h]7 dlxgfsf]xf]. pSt dlxgfdf hDdf slt lbg 5g\ ug M

Ps jif{df 12 dlxgf x'5g\. ;fdf'otM dlxgfdf 30 lbg x'5g\. t/ sg}sg}dlxgfdf 29, 31 / 32 lbg klg x'5g\. Ps jif{df hDdf slt lbg x'5g\< o; jif{sf ;a} dlxgfsf lbgx¿ hf]8]/ kQf nufpm .

;fdf'otof Ps jif{df 365 lbg x'5g\.

lbg / jif{sf]lx;fa

Ps jif{df 365 lbg x'5g\eg]tnsf sf7fx¿df ldNg];^\of cfÇgf]sfkLdf n]v M

1 jif{df 365 lbg x'5g\.

2 jif{df 2 x 365 = □ lbg x'5g\.

3 jif{df □ x 365 lbg = □ lbg x'5g\.

4 jif{df □ x □ lbg = □ lbg x'5g\.

cEof;

1. lbgnf0{dlxgfdf ¿kfGt/ u/ M

   -s_ 30 lbg -v_ 60 lbg -u_ 240 lbg

   -3_ 300 lbg -a_ 210 lbg -r_ 270 lbg

2. lbgnf0{dlxgf / lbgdf ¿kfGt/ u/ M

   -s_ 40 lbg -v_ 76 lbg -u_ 87 lbg

   -3_ 125 lbg -a_ 166 lbg -r_ 215 lbg

3. lbgnf0{xKtfdf ¿kfGt/ u/ M

   -s_ 14 lbg -v_ 21 lbg -u_ 35 lbg

   -3_ 63 lbg -a_ 273 lbg -r_ 364 lbg

4. lbgnf0{xKtf / lbgdf ¿kfGt/ u/ M

   -s_ 24 lbg -v_ 47 lbg -u_ 83 lbg

   -3_ 132 lbg -a_ 240 lbg -r_ 320 lbg

5. jif{nf0{lbgdf ¿kfGt/ u/ M

   -s_ 2 jif{ -v_ 4 jif{ -u_ 6 jif{

   -3_ 14 jif{ -a_ 20 jif{ -r_ 50 jif{

6. dlxgfnf0{jif{df ¿kfGt/ u/ M

   -s_ 48 dlxgf -v_ 60 dlxgf -u_ 84 dlxgf

   -3_ 108 dlxgf -a_ 120 dlxgf -r_ 144 dlxgf

7. dlxgfnf0{jif{/ dlxgfdf ¿kfGt/ u/ M

   -s_ 50 dlxgf -v_ 85 dlxgf -u_ 170 dlxgf

   -3_ 250 dlxgf -a_ 1224 dlxgf -r_ 2436 dlxgf

;do M 306f / ldg]6

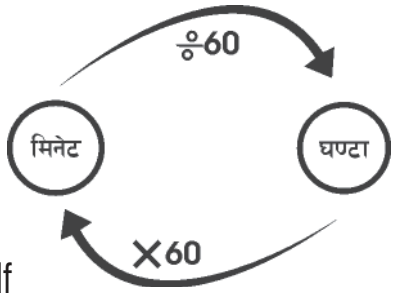
38Ldf ldg]6sf];0{n]k/}Ps k|Gsf]3Dbf 60 ldg]6 x|G5 . 60 ldg]6sf]Ps 306f x|G5 . Ps 306fdf 38Lsf]306f ;0{n]Pp6f ;aVof kf/ u5{.

tnsf 38Lx¿ x]/f}M

oL 38Lx¿df ePsf];do k9 / klxnf]38L / t]/f]38Ln]b}vfPsf];dosf]k|/s slt 5, 5nk|n u/ .

k9, 5nk|n u/ / l;s M

bfof%sf]lrq x]/ / s]eGg vf]hPsf]5, 5nk|n u/ .



;donf0{ldg]6af6 306fdf cyjf 306faf6 ldg]6df abN|g ;lsG5 . ldg]6nf0{306fdf JoSt ug{ldg]6nf0{60 n]efu ug{k5{. To:t} 306fdf ePsf];donf0{ldg]6df JoSt ug{306fnf0{60 n]u0fg ug{k5{.

pbfx/0f 1

5 306fnf0{ldg]6df ¿kfGt/ u/ M

5 306f
= 5 x 60 ldg]6
= 300 ldg]6

pbfx/0f 2

7 306f 20 ldg]6nf0{ldg]6df ¿kfGt/ u/ M

7 306f 20 ldg]6

oxf“20 ldg]6nf0{abN|g'kb{g . To;}n]7 306fnf0{ldg]6df abnL b'j}hf8f}M

7 306f 20 ldg]6

= 7 x 60 ldg]6 ± 20 ldg]6

= 420 ldg]6 ± 20 ldg]6

= 440 ldg]6

pbfx/0f 3

250 ldg]6nf0{306f / ldg]6df ¿kfGt/ u/ M

ldg]6nf0{306fdf ¿kfGt/ ug{60 n]efu ug{k5{.

```
      4
   ------
60 ) 250
     240
   ------
      10
```

To;}n] 250 ldg]6 = 4 306f 10 ldg]6

cEof;

1. 306fnf0{ldg]6df ¿kfGt/ u/ M

   -s_ 7 306f -v_ 8 306f -u_ 24 306f

   -3_ 36 306f -a_ 100 306f -r_ 340 306f

2. ldg]6nf0{306fdf ¿kfGt/ u/ M

   -s_ 120 ldg]6 -v_ 180 ldg]6 -u_ 240 ldg]6

3. ldg]6nf0{306fdf / ldg]6df JoSt u/ M

   -s_ 110 ldg]6 -v_ 170 ldg]6 -u_ 250 ldg]6

   -3_ 340 ldg]6 -a_ 420 ldg]6 -r_ 570 ldg]6

;do M ;}sf]8 / ldg]6

;ú}sf]lrqdf /Lgf / ;Ltf 8f]/L vl]b}5g\. olb ltdLn]klg 8f]/L l56fl]56f]15 k6s gf£of}eg]slt ;do nfU5 xf]nf < o:tf] ;fgf] ;do ldg]6eGbf ;fgf] xG5 . o:tf] ;fgf] ;do gfKg ;}sf]8sf]kpfu ul/G5 . 15 k6s 8f]/L gf£bf sl/a 15 ;}sf]8 nfU5 .

38Ln]bl]vfpg] ;fgf]Psf0 ;}sf]8 xf].

1 ldg]6df 60 ;}sf]8 xG5 .

38Ldf dl;gf];Of{n];}sf]8 hgfp5 . Ps ldg]6df ;}sf]8 ;Of{n] k"/f Ps rSs/ nufp5 . To;}n]60 ;}sf]8 a/fa/ 1 ldg]6 xG5 .

lj|ofsnfk 1

bfof"sf]38Ldf 10 ah]/ 15 ;}sf]8 uPsf]5 . 20 ;}sf]8kl5 ;}sf]8 ;O{sxf"kU5 xf]nf <

lj|ofsnfk 2

leQ}8L jf :6kjfr (Stop Watch) sf]kpfu u/L ltdL 30 ;}sf]8df bf8]/ slt k/ kUg ;S5f}< lzIfs tyf ;fyLx¿sf];xfotfn]kQf nufpm .

;}sf]8sf]lx;fa

pbfx/0f 1

60 ;}sf]8sf]1 ldg]6 xG5 eg]3 ldg]6sf]slt ;}sf]8 xG5 <

1 ldg]6 = 60 ;}sf]8

3 ldg]6 = 3 x 60 ;}sf]8 = 180 ;}sf]8

pbfx/0f 2

;donf0{ ;}s]18df abn M

2 ldg]6 15 ;}s]18

2 ldg]6 + 15 ;}s]18

= 2 x 60 ;}s]18 + 15 ;}s]18 = 120 ;}s]18 + 15 ;}s]18 = 135 ;}s]18

cEof;

;}s]18df abn M

-s_ 12 ldg]6 -v_ 15 ldg]6 20 ;}s]18 -u_ 30 ldg]6 45 ;}s]18

-3_ 32 ldg]6 10 ;}s]18 -^{a}_ 35 ldg]6 40 ;}s]18

k9, 5nkmn u/ / l;s M

lrqdf 10 ah] 25 ldg]6 uPsf]38L lbOPsf] 5 . 1 306f 30 ldg]6kl5 ;0{¿ sxf“sxf“ k'ugk5{ 5nkmn u/ .

;dosf]hf8

pbfx/0f 1

xl/ 7Ls **10:30** ah]3/af6 c:ktfn lx8'bf]. 7Ls **1** 306f **17** ldg]6df c:ktfn k'Uof] eg]slt ah]c:ktfn k'Uof]xf]nf <

xl/ 3/af6 c:ktfn lx8}sf];do = 10 ah] 30 ldg]6

xl/ c:ktfn kusf];do = 7Ls 1 306f 17 ldg]6

s]xl/ c:ktfn kusf];do hf8 ljljofaf6 kQf nufpg ;lsG5 < x]/f}M

10 306f 30 ldg]6
\+ 1 306f 17 ldg]6
11 306f 47 ldg]6

ldg]6–ldg]6 / 306f–306f 56'6f56'6}hf8ug'k5{.

ca xl/ c:ktfn ku}sf];do 11 ah] 47 ldg]6 xf].

;dosf]36fp

pbfx/0f 2

12 306f 30 ldg]6 15 ;s]8af6 8 306f 15 ldg]6 10 ;s]8 36fpM

12 306f 30 ldg]6 15 ;s]8
– 8 306f 15 ldg]6 10 ;s]8
4 306f 15 ldg]6 5 ;s]8

;s]8af6 ;s]8, ldg]6af6 ldg]6 / 306faf6 306f 36fpgk5{.

cEof;

1. vfnL 7fpd'df ldNg] ;a\of nv M

-s_ 60 ;s]8 = □ ldg]6 -v_ □ ldg]6 = 1 306f

-u_ □ lbg = 1 jif{ -3_ □ 306f = 1 lbg

-a_ 7 lbg = □ xKtf -r_ □ lbg = 1 dlxgf

-5_ 1 ldg]6 20 ;s]8 = □ ;s]8 -h_ 1 lbg 5 306f = □ 306f

-´_ Ps jif{ 4 dlxgf = □ dlxgf

2. ;'us]38Ln]bv\fPsf] ;do x]/, 7Ls 40 ldg]6kl5 slt aH5, lx;fa u/L lgsfn .

3. ;'us]38Ldf bv\fPsf] ;dob]v 7Ls 2 306f 15 ldg]6df slt aH5 <

4. k|jf{ 2:30 ah]ahf/ uP . 3/af6 lx8]sf]7Ls 1 306f 45 ldg]6df 3/ cf0ku] eg]pgL slt ah]3/ cf0ku]5g\xf]nf <

5. u? 7Ls 12 ah]/ 15 ldg]6 hf'df slffdf k:g'eof]. 50 ldg]6 ;Dd k9fP/ aflx/ lg:sg'eof]eg] slt ah]aflx/ lg:sg'eof]xf]nf <

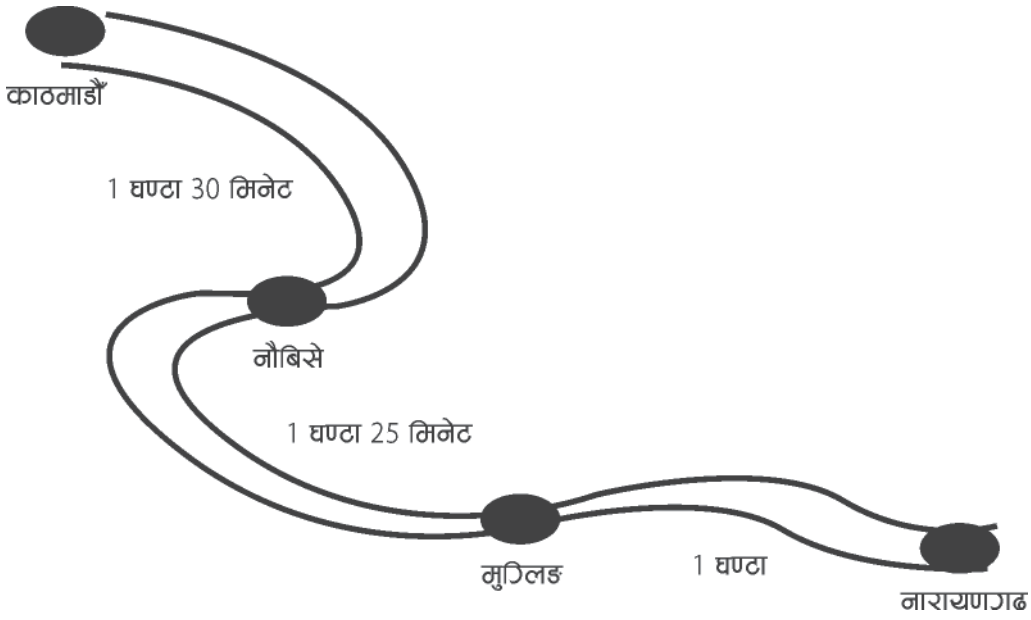
6. s}hfz hf8f]lrjbf dgfpg 2 dlxgfsf nflu 3/ uPsf lyP . t/ pgL 20 lbgd} k|s[eg]slt lbg l56f]k|s[xf]nfg\<

7. 3 lbgsf]ofqf k'/f ug{lyof]. 52 306f ofqf u/]kl5 slt 306f ofqf ug{af'sL /x]bf]<

8. 5 jif{7 dlxgfdf slt dlxgf yk]8 jif{9 dlxgf x'g5 xf]nf <

9. ;Ltfn]cfÇgf]8@^ sfkLdf 3 lbg nufP/ lrqx¿ agf0g\. pgn]cf0af/ 1 306f 15 ldg]6, ;f]daf/ 3 306f 20 ldg]6 / d^\unaf/ 2 306f 5 ldg]6 ;do cjlw;Dd lrq agfPsL ly0g\eg]pgn]hDdf slt cjlw;Dd lrq agfPsL xf]ng\.

10. Pp6f a;nf0{sf7df8f}af6 gf/fo0fu9;Dd k'g nfUg];do lbOPsf]5 . hDdf slt cjlwdf sf7df8f}af6 gf/fo0fu9 a; k'5 xf]nf <



11. Hofnfbf/Ldf sfd ug]{Pshgf HofdLn]hDdf 3 dlxgf 25 lbg sfd u/]5 . olb p;n]2 dlxgf 3 lbgsf]dfq Hofnf kfP5 eg]slt lbgsf]Hofnf kfpg af'sL xf]nf <

5.2 dbf

tnsf dbfx¿ x]Y / lrg M

?= !

?= @

?= %

?= !)

?= @)

?= @%

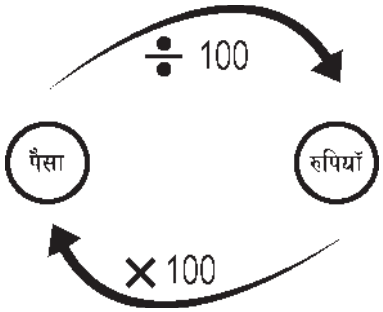
?= %)

?= !))

?= %))

?= !)))

dbfx¿ l;Ssf / gf6sf ¿kdf x6g\. dbfsf] rNtLdf /x]sf] ;fgf]Psf0 k}f xf]. 100 k}fsf]1 ?lkof"x6 . s]ltdL e6g ;S5f}200 k}fsf]slt ?lkof"x6 <



s;/L yfxf kfpg] 5nkmn u/ .

;ü}sf]lrqn]s]atfp5 < k}fnf0{?lkof"df abNg 100 n]efu ug{k5{.

To:t}?lkof"nf0{k}fdf abNg 100 n]u0fg ug{k5{.

dbfsf]¿kf6t/

pbf/x0f 1

3 ?lkof"25 k}fdf slt k}f x6g <

oxf;" 3 ?lkof"25 k}f = 3 x 100 k}f + 25 k}f = 325 k}f

pbfx/0f 2

365 k}fdf slt ?lkof"/ slt k}f x6g <

?= 1 = 100 k}f,

To;}n] 100 k}fn]efu ubf{

```
      3
  100)365
     -300
      65 z]if
```

To;}n] 365 k}f = 3 ?lkof"65 k}f x6g .

dbf;DaGwL Jofjxfl/s ;d:ofx¿

pbfx/0f 3

;'/lznf0{cfdfn]3 ?lkof"60 k}f / aafn]2 ?lkof"75 k}f lbg'eof]. ca ;'/l;ü hDdf slt ?lkof"eof]<

?lkof"/ k}fnf0{cnucnu /fv] hf]8\bf –

?=	k}
3	60
+ 2	75
5	135

lsgsL, 135 k}f = 1 ?lkof" 35 k}f x6g .

= 6 ?lkof"35 k}f .

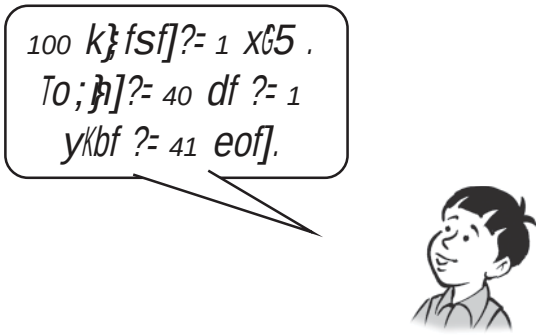
pbfx/0f 4

xldbn]?= 10 / 25 k}fsf b/n]rf/cf6f y}hLdf k}f /fv]sf /x5g\. pgL ;'u hDdf slt k}f /x5 <

?lkof"/ k}fnf0{cnucnu /fv] u©bf –

?=	k}
10	25
x	4
40	100

= ?= 41



pbfx/0f 5

12 ?lkof"/ 60 k}f rf/ hgfnf0{a/fa/ af8\bf k]o]sn]slt k}f kfp5g\<

?lkof"/ k}fnf0{cnucnu efu nufpbf –

	3	15
4	?=	k}
	12	60
	– 12	4
	x	20
		– 20
		x

k]o]sn]3 ?lkof"15 k}f kfp5g\.

cEof;

1. Pp6f /]6'/]6df kf0g] vfgfx¿ / ltgsf] d\No /flvPsf] tflnsf **(Menu)** lbOPsf]5 . tflnsf x/L tnsf ;d:ofx¿sf]pQ/ b]pm M

चिसो पिउने पदार्थ	खाजा
जुस : रु.15 दूध : रु.14 पानी : रु. 20	मम प्रति प्लेट : रु. 30 चाउमिन प्रति प्लेट : रु. 20 पैसा 40 मासुचिउरा प्रति प्लेट : रु. 50 पैसा 30

-s_ 1 h';, 1 Kn6 d=d= lsg] vfof]eg]slt ltgkf{nf{<

-v_ 1 af]tn kfgL / 1 Kn6 rfprfp vfof]eg]slt ltgkf{nf{<

-u_ 1 Knf6 df;lrp/f vfP/ ?= 100 lbof]eg]slt /sd lkmtf{kf0G5 xf]nf <

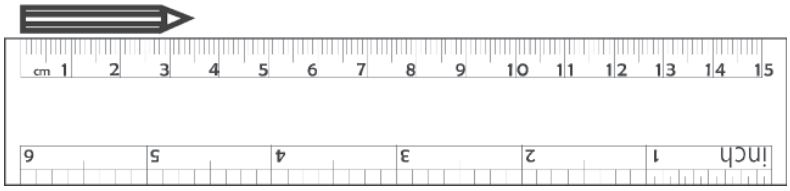
-3_ 2 Knf6 rfprfp vfPsf]/x]5 eg]hDdf slt ltg{k5{xf]nf <

2. k':ts k;ndf p:t}5 cf6f lstfa lsGbf 175 ?lkof"50 k}f ltg{k5{eg]Pp6f lstfasf]dWo slt kbf{/x]5 <

3. Pp6f 38Lsf]dWo ?= 750 k5{. olb uf]xs;'ü 540 ?lkof"50 k}f /x]5 eg]38L lsGg slt ?lkof"k'Ubg xf]nf <

5.3 b'/L (Distance)

k9 / l;s M



dflysf]l;;fsndsf]nDaf0 3 ;]ld= eGbf a9L 5 . t/ 4 ;]ld= kU}sf]5g . o:tf]a]nf ?n/df n]vPsf ;]ld= sf];'Vofa\rsf ;fgf Psf0x¿ x'g{k5{. t\ ;fgf Psf0x¿ ldlnld6/ x'g\. Ps ;]G6ld6/df hDdf 10 cf6f ldlnld6/sf Psf0x¿ x'G5g\.

To;}n] 1 ;]ld= = 10 ldlnld6/ -ld=ld=_

dflysf]l;;fsndsf]nDaf0 3 ;]ld= k/ 5 cf6f ;fgf Psf0;Dd kU}sf]5 . To;}n] pSt l;;fsndsf]nDaf0 3 ;]ld= 5 ld=ld= eof].

ljljofsnfk

1. ltdf]l;;fsnd slt ;]ld= / slt ld=ld= 5, gfk]/ eg .
2. 1 ;]ld= eGbf ;fgf s'g}3 cf6f j:t'x¿ vf]h]/ ltgLx¿sf]gfk kQf nufpm .
3. ltdf]afof"xftsf]a9Lcf}nfsf]gfk slt ld=ld= 5, ;fyLsf];xof]u ln0{gfk .

pbfx/0f 1

1 ;]ld= df 10 ld=ld= x'G5 eg]7 ;]ld=df slt ld=ld= x'G5 <

1 ;]ld= = 10 ld=ld=

7 ;]ld= = 10 x 7 ld=ld=

= 70 ld=ld=

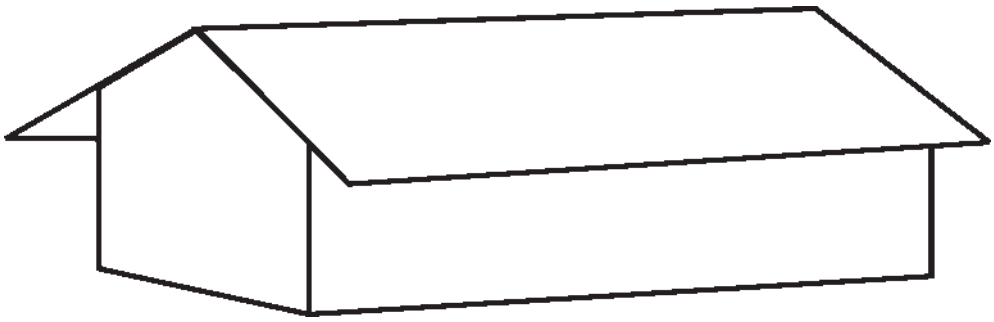
cEof;

1. ldlnld6/ -ld=ld=_ df JoSt u/ M

-s_ 15 ;]ld= -v_ 25 ;]ld= -u_ 40 ;]ld=

-3_ 80 ;]ld= 5 ld=ld= -ª_ 92 ;]ld= 2 ld=ld= -r_ 87 ;]ld= 7 ld=ld=

;]G6ld6/, ld6/ / lsnf]d6/



o; 3/sf]nDaf0 slt xf]nf ;]ld= kpf]u u/]/ gfKg t cln cK7\bf/f]5 lg ¤ lsg xf]nf < To;}u/L Ps 7fpb]v csf{7fp"; Ddsf]b'/L gfKg klg t ;] ld= :sf]n]dfq cln cK7\bf/}xG5 .

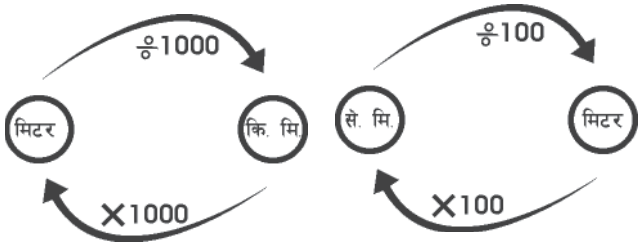
To;}n] j:t'sf]cfsf/ / b'/Lcg';f/ gfKg]Psf0 klg ;fgf]cyjf 7'nf]xg]u5{.

tnsf gfksf Psf0x¿ x]/ M

10 ldlnld6/ = 1 ;]G6ld6/

100 ;]G6ld6/ = 1 ld6/

1000 ld6/ = 1 lsnf]d6/



ltdf]bO{kf0nfsf]nDaf0 cGbfhL Ps ld6/ xG5 . ltdf]slt kf0nfsf]1 lsnf]d6/ xG5 < cGbfhL 2000 kf0nfdf 1 lsnf]d6/ lx8\g ;S5f}.

slt ldg]6df 1 ls= ld= lx8\g ;lsG5 xf]nf <

tnsf b'/L cyjf nDaf0 gfKg sg gfksf]Psf0 pkoSt xG5, 5nkmn u/ M

-s_ 6ahsf]nDaf0 -v_ slffsf]7fsf]nDaf0 -u_ sndsf]nDaf0

-3_ k'tssf]nDaf0 -ª_ dflg;sf]prf0 -r_ ¿vsf]prf0

-5_ 8:6/sf]nDaf0 -h_ kf]v/faf6 jL/uGh;Ddsf]b'/L

-´_ sf7df8f}]v gf/fo0fu9;Ddsf]b'/L

-`_ g]kfnsf]d]rL gbLb]v dxfsfnL gbL;Ddsf]b'/L

cEof;

ltdf]ljBfnob]v lgDglnlvt j:t' cyjf 7fp'sf]b'/L cGbfh u/ / pkoSt :sJnaf6 gfkL x]/ M

-s_ ltdf]slffsf]7fb]v kWFfgfWofkssf]sf]7f;Ddsf]b'/L

-v_ slffsf]7fdf ltdL a;}sf]7fpb]v lzIfs plePsf 7fp";Ddsf]b'/L

-u_ ljBfnoaf6 zf}rfno;Ddsf]b'/L

-3_ ljBfnosf]slff Psb]v slff tLgsf]slffsf]7fsf]b'/L

-ª_ ljBfnoaf6 kfgLsf]wf/f;Ddsf]b'/L

pbfx/0f 1

142 ;}ld= df slt ld6/ / ;} ld= sf Psf0x¿ x'G5g\<

1 ld= = 100 ;}ld=

To;}n] 142 ;}ld= = (100 + 42) ;}ld=

= 100 ;}ld= + 42 ;}ld=

= 1 ld= 42 ;}ld=

pbfx/0f 2

2 ld= 30 ;}ld= nf0{;}ld= df abn M

oxf"ld= = 2 x 100 ;}ld=

= 200 ;}ld=

To;}n] 2 ld= 30 ;}ld= = (200 + 30) ;}ld=

= 230 ;}ld=

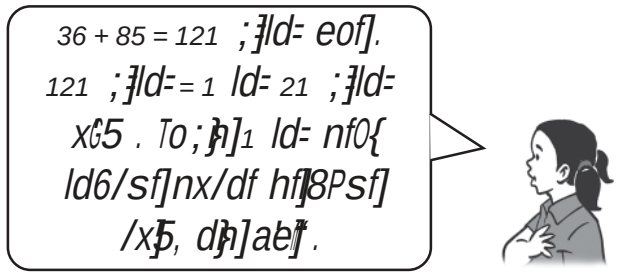
pbfx/0f 3

1 ld= 36 ;}ld= nfdf]8f}Ldf 2 ld= 85 ;}ld= nfdf]8f}L hf8]kl5 slt nfdf]a@5 xf]nf <

ld6/nf0{ld6/;'ú / ;}ld= nf0{;}ld= ;'ú hf8L xb]f{–

ld=	;}	ld=
1	1	36
+ 2		85
3		121

= 4 ld= 21 ;}ld=



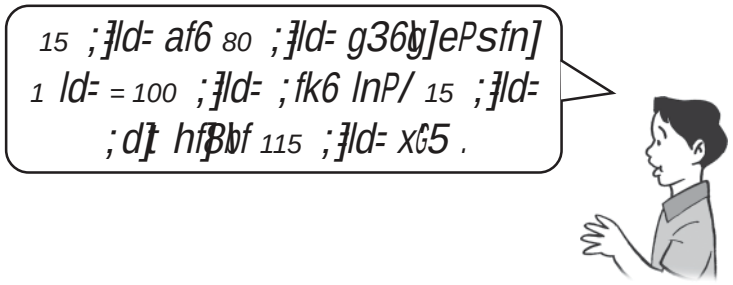
pbfx/0f 4

Pp6f 3 ld= 15 ;}ld= nfdf]vDafsf]1 ld= 80 ;}ld= ;Dd /a\uf0Psf]5 . g/a\uf0Psf] efusf]nDaf0 slt xf]nf <

ld= af6 ld= / ;}ld= af6 ;}ld= 36fpbf –

ld6/	;}	ld=
2		100
3		15
2		115
– 1		80

1 ld= 35 ;}ld=



To;}h] g/a\uf0Psf]efu = 1 ld= 35 ;}ld=

cEof;

1. ;}ld= df ¿kf@t/ u/ M

   -s_ 2 ld= -v_ 3 ld= -u_ 5 ld= -3_ 3 ld= 55 ;}ld=

2. ld= / ;}ld= df ¿kf@t/ u/ M

   -s_ 200 ;}ld= -v_ 600 ;}ld= -u_ 123 ;}ld= -3_ 225 ;}ld=

3. ls=ld= / ld= df abn M

   -s_ 1025 ld= -v_ 1500 ld= -u_ 2556 ld= -3_ 2000 ld=

4. ld6/df ¿kfGt/ u/ M

-s_ 3 ls=ld= -v_ 5 ls=ld=

-u_ 10 ls=ld= 230 ld= -3_ 15 ls=ld= 30 ld=

5. hf8 M

-s_	15 ld= 75 ;}ld=	-v_	9 ld= 75 ;}ld=
	+ 7 ld= 35 ;}ld=		+ 10 ld= 75 ;}ld=
-u_	150 ls=ld= 900 ld=	-3_	170 ls=ld= 680 ld= 75 ;}ld=
	+ 306 ls=ld= 880 ld=		+ 150 ls=ld= 450 ld= 60 ;}ld=

6. 36fpm M

-s_	15 ld= 60 ;}ld=	-v_	17 ld= 76 ;}ld=
	– 12 ld= 90 ;}ld=		– 12 ld= 85 ;}ld=
-u_	100 ls=ld= 700 ld=	-3_	324 ls=ld= 582 ld=
	– 90 ls=ld= 800 ld=		– 190 ls=ld= 683 ld=

7. Pp6f kvf{n 7 ld= 50 ;}ld= nfdf]5 . o; ;'}csf{ 2 ld= 60 ;}ld= nfdf]kvf{n agfof]eg]kvf{nsf]hDdf nDafO slt xG5 <

8. Pp6f sfnf{kf6Lsf]nDafO 2 ld= 15 ;}ld= 5 / rf8fO 1 ld= 75 ;}ld /x]5 . rf8fOeGbf nDafO slt a9L 5 <

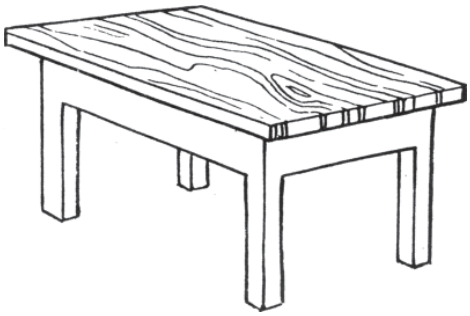
9. Pp6f 1 ld= 20 ;}ld= nfdf]/a/ tGsfpbf 1 ld= 55 ;}ld= ku{5 eg]/a/ slt ;}ld= tlGsP5 <

10. Pp6f 200 ls=ld= nfdf]af6f]agfpg'5 . 120 ls=ld= 750 ld= af6f]hg>dbfgaf6 agfO;sf{l5 slt af6f]agfpg af'sL /xG5 <

11. 1 ld= 76 ;}ld nfdf]rf/ 6'jmf sk8fnfO{hf8]/ l;nfpbf slt nfdf]sk8fsf] Pp6}6'jmf aG5 <

5.4 cfotsf]kl/ldlt (Perimeter of a Rectangle)

6]ahdflysf]; txsf]cfsf/ s:tf]5 < o; sf] nDaf0 / rf8f0 ld6/ :sn kofu u/L gfk . 6]ahsf]nDaf0 / rf8f0df slt k|m/s /x5 < 6]ahsf] dflysf] ; txsf] 3/f slt nfdf]5 xf]nf < slffsf]7fdf ePsf o:tf cfotfsf/ j:t'sf]; 'r L tof/ kf/ .



'd]/f] ul0ft slff $' lstfasf] nDaf0 24 ;}ld= / rf8f0 17 ;}ld= 5 . o; sf] jl/kl/sf] 3/f slt xf]nf < o:tf] jl/kl/sf] 3/fsf]gfknf0{kl/ldlt (Perimeter) elg5 . lstfasf]kl/ldlt gfKbf nDaf0nf0{slt rf]6 gfKgk5{< nDaf0 h:t}u/L rf8f0nf0{klg To; /L g}bO{k6s gfKgknf{ls gknf{<

oxf;" kl/ldlt = 2 x 24 ;}ld= + 2 x 17 ;}ld=
= 48 ;}ld= + 34 ;}ld=
= 82 ;}ld=

cEof;

1. tn lbOPsf]k"0f{ cfotfsf/ j:t'sf]kl/ldlt lgsfn M

-s_ sfuhsf]kfgf

15 ;}ld=

10 ;}ld=

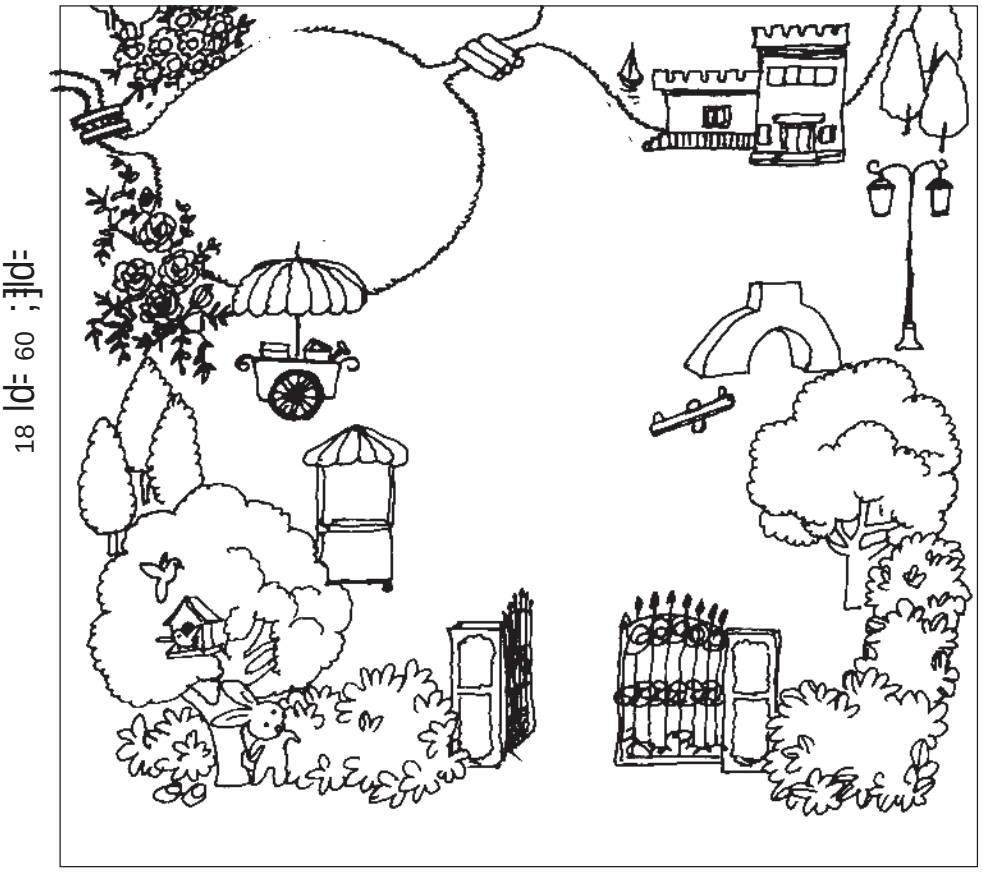
-v_ k|ffbfsf]k]d

25 ;}ld=

28 ;}ld=

-u_ sfnf]kf6L

-3_ tnsf]au}rfsf]nDaf0 20 ld= 50 ;Dd= / rf8f0 18 ld= 60 ;Dd=



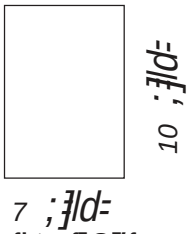
5.5 lrq]bkm n

j:t'sf] ;txn] cfu6}sf] 7fp"hf0{ pSt j:t'sf] To; ;txsf] lrq]bkm n elg5 . tnsf] lrqdf lstfa / sfkLsf] aflx/L 3/f xl/ ltgLx¿ n] cfu6}sf] 7fp"b]vf0Psf] 5 . sg rflx"sf] lrq]bkm n a9L /x]5 <

lstfa

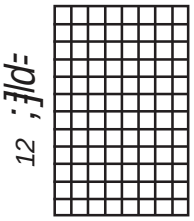
gf6 sfkL

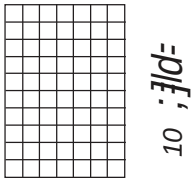
lstfasf] 3/f



sfkLsf] 3/f

ca b'j}df Ps Ps ;]ld= sf]km/sdf /]vfx¿ nDaf0lt/ / rf8f0lt/ sf7f]M





ca lstfasf] sf7f ugf}M

sfkLsf sf7fx¿ ugf}M

nDaf0lt/ 12 cf6f sf7fx¿ 5g\.

nDaf0lt/ 10 cf6f sf7fx¿ 5g\.

rf8f0lt/ 8 cf6f sf7fx¿ 5g\.

rf8f0lt/ 7 cf6f sf7fx¿ 5g\.

hDdf slt sf7fx¿ eP <

hDdf 10 x 7 = 70 sf7fx¿ eP .

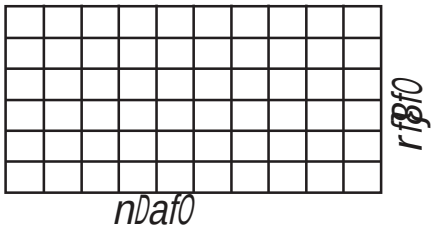
hDdf 12 x 8 = 96 sf7fx¿ eP .

To;}n] lstfasf] lrq]bkm n 96 ju{;]ld= / sfkLsf] lrq]bkm n 70 ju{;]ld= eof].

To;}n] sfkLsf] eGbf lstfasf] lrq]bkm n a9L 5 .

pbfx/0f 1

tnsf]lrqdf 1 ju{;]ld= sf nDaf0 / rf]8f0lt/sf sf]7fx¿ ugL k'/}lrqsf] lfq]kmn kQf nufpm M



nDaf0lt/ ePsf juf{sf/ sf]7fx¿sf];a\of = 10

rf]8f0lt/ ePsf juf{sf/ sf]7fx¿sf];a\of = 6

To;}n]k'/}lrqsf]lfq]kmn = 10 x 6 = 60 ju{;]ld=

pbfx/0f 2

tnsf cfotfsf/ ;txsf]lfq]kmn lgsfn M

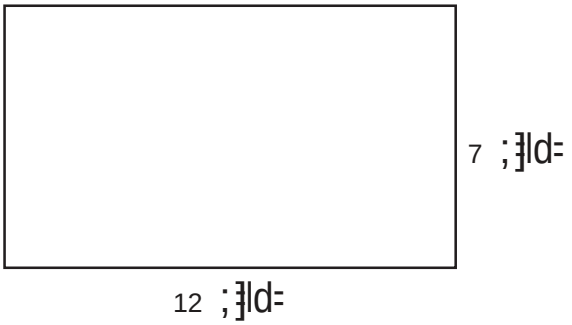
lbOPsf]cfotfsf/ j:t'sf]

nDaf0 = 12 ;]ld=

rf]8f0 = 7 ;]ld=

lfq]kmn = 12 x 7 ju{;]ld=

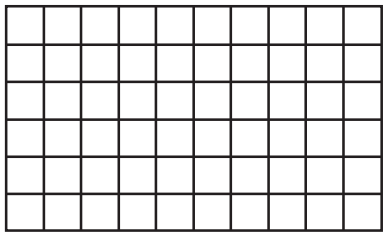
= 84 ju{;]ld=

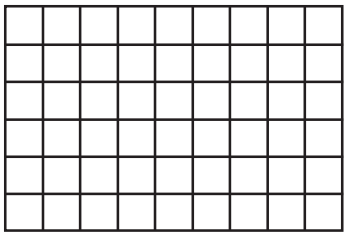


cEof;

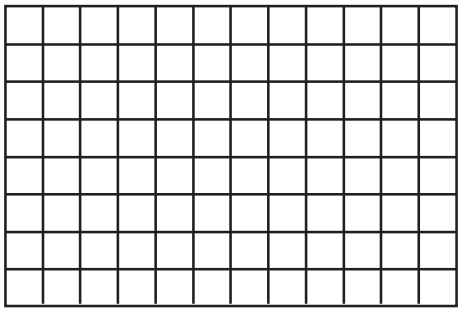
1. tnsf cfotfsf/ ;txsf]lfq]kmn nDaf0 / rf]8f0sf juf{sf/ sf]7fx¿ ugL kQf nufpm M

   -k]o]s sf]7fsf]lfq]kmn 1 ju{;]ld= 5 ._

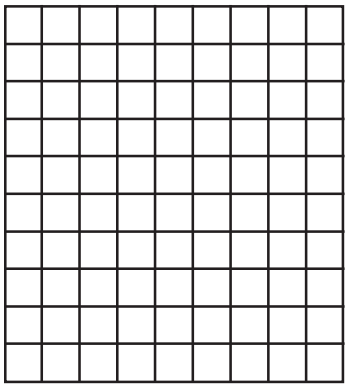
   -s_ 

   -v_ 

-u_

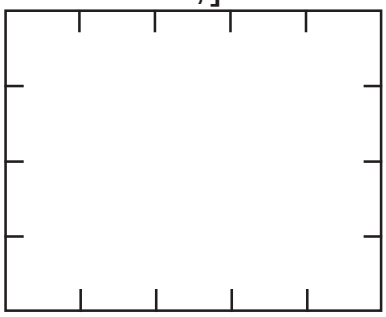


-3_

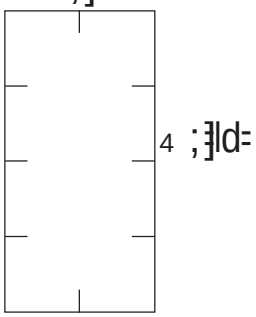


2. tnsf]k]o]s cfotfsf/ cfs[tdf jus{f Psf0 lvr / lfq]kmn lgsfn M

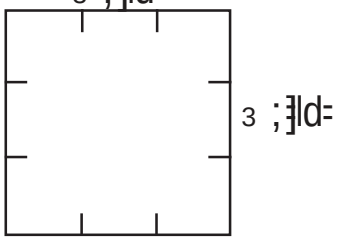
-s_



-v_

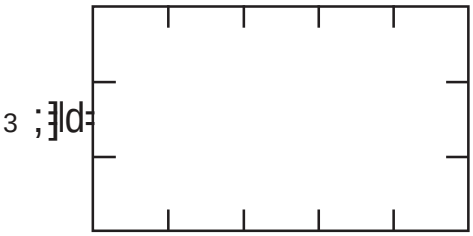


-u_

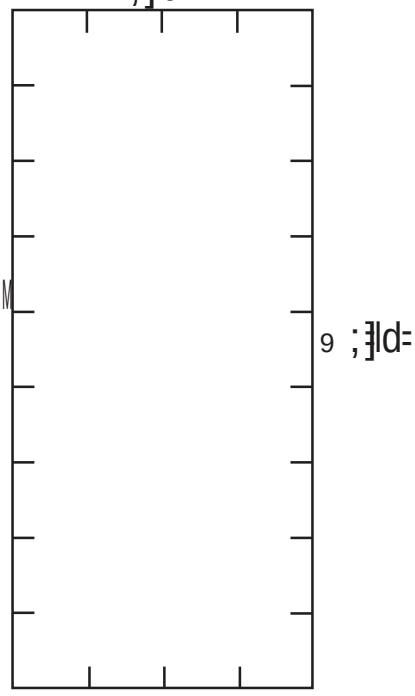


3. tnsf cfotfsf/ lrqx¿sf] lfq]kmn lgsfn M

-s_

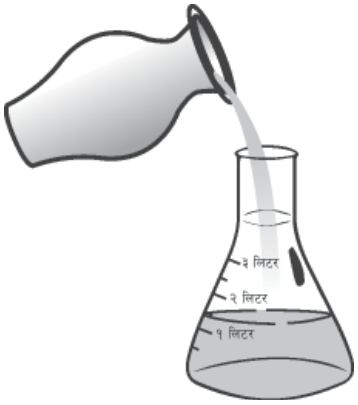


-v_



5.6 lfdtf (Capacity)

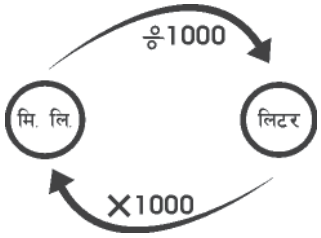
lrqdf Pp6f cDvf]/f / Pp6f gfKg] l;lnG8/ (Measuring Cylinder) b]lvfOPsf]5 . cfDvf]/fsf] e/L kfgLnfO{l;lnG8/df vGofpb"f kfgL 1.5 ln6/ ;Dd kUof]. oxf"cDvf]/fsf]lfdtf 1.5 -;f9]Ps_ ln6/ eof]. t/n j:t'sf]lfdtf gfKg]PsfOnfO{ ln6/ (litre, ln=_ eG5g\.



bfof"sf] lrqdf Pp6f gfKg] l;lnG8/ / Pp6f k/LIfOf gnL (Test Tube) b]lvfOPsf]5 . k/LIfOf gnLdf ePsf]kfgLsf]gfk slt xf]nf < cyjf k/LIfOf gnLsf] lfdtf slt xf]nf < 1 ln6/nfO{ 1000 a/fa/ efudf afl8Psf]xG5 / k"o}s efunfO{1 ldlnln6/ (Mililitre) jf ld=ln= eG5g\. ca k/LIfOf gnLsf] lfdtf slt 5 eg]/ yfxf kfpg k/LIfOf gnLsf]kfgLnfO{gfKg] l;lnG8/df vGofP/ x'g]k5{.

To;}n] j:t'sf] kl/df0f gfKg]PsfO ln6/ xf]. 1 ln6/ = 1000 ldlnln6/ xG5 .

pbfx/0f 1



2 ln6/ 300 ld=ln= df slt ld=ln= xG5 <

oxf"; 1 ln= = 1000 ld=ln=

To;}n] 2 ln6/ = 2 x 1000 = 2000 ld=ln=

To;}n] 2 ln= 300 ld=ln= = (2000 + 300) ld=ln= = 2300 ld=ln=

pbfx/0f 2

3500 ld=ln= df slt ln6/ / slt ld=ln= xG5 <

1000 ld=ln= = 1 ln6/

To;}h] efu ubf{–

3500 ld=ln= = 3 ln6/ 500 ld=ln= xG5 .

500 ld=ln= = 0.5 ln6/ xG5 .

To;}h] 3500 ld=ln= = 3.5 ln= = $3\frac{1}{2}$ ln6/ xG5 .

pbfx/0f 3

3 ln6/ 720 ld=ln= / 5 ln6/ 630 ld=ln= hf8 M

	ln6/	ld=ln=
	3	720
+	5	630
	8	1350

= 9 ln= 350 ld=ln=

pbfx/0f 4

4 ln6/ 325 ld=ln= af6 2 ln6/ 500 ld=ln= 36fpm M

	ld=	ld=ln=
	3 ~~4~~	1325
–	2	500
	1	ln= 825 ld=ln=

325 ld=ln= af6 500 ld=ln= g36}sfn]
1 ln= = 1000 ld=ln= ;fk6 lnP/ 325 df
hf8] cfPsf]1325 af6 500 36fcf}.

cEof;

1. ld=ln= df ¿kfGt/ u/ M

   -s_ 2 ln= -v_ 3 ln6/

   -u_ 2 ln6/ 500 ld=ln= -3_ 2 ln6/ 750 ld=ln=

2. ln= / ld=ln= df ¿kfGt/ u/ M

   -s_ 1760 ld=ln= -v_ 5600 ld=ln=

   -u_ 7391 ld=ln= -3_ 2 ln6/ 500 ld=ln=

3. hf8 M

   -s_ 3 ln= 750 ld=ln=
   + 5 ln= 200 ld=ln=

   -v_ 6 ln= 390 ld=ln=
   + 8 ln= 715 ld=ln=

   -u_ 4 ln= 126 ld=ln=
   + 9 ln= 900 ld=ln=

   -3_ 13 ln= 678 ld=ln=
   + 17 ln= 588 ld=ln=

4. 36fpm M

   -s_ 9 ln= 315 ld=ln=
   - 6 ln= 500 ld=ln=

   -v_ 5 ln= 600 ld=ln=
   - 3 ln= 875 ld=ln=

   -u_ 17 ln= 750 ld=ln=
   - 9 ln= 900 ld=ln=

   -3_ 8 ln= 28 ld=ln=
   - 7 ln= 588 ld=ln=

5. zLnf 750 ld=ln=sf] af6n lnP/ k;ndf u0g\. pgn]Ps ln6/ t] lslgg\ eg] af]tndf slt t] c6fPg <

6. 2 ln6/ tj]h /fVg slt cf6f 500 ld=ln= sf af]tn rflxG5g\<

7. 1 ln6/ 200 ld=ln= bW rf/ hgfn]a/fa/ af8]/ vfP5g\eg]Ps hgfn]slt bW vfof]<

8. Pp6f lrofbfgLdf 1250 ld=ln= lrof c6fp5 . To:tf 4 cf6f lrofbfgLdf slt lrof c6fpnf <

9. tn lrqdf b]vfOPsf ef8f / ltgLx¿sf] lfdtf /fdf]t ú x]/ / lgDglnlvt k|fgsf]hjfkm b]pm M

265 ld=ln= 385 ld=ln= 563 ld=ln= 1 ln=250 ld=ln=

-s_ ;a}ef8fx¿df t/n kbfy{e/L /fVbf slt ln= / ld=ln= xG5 <

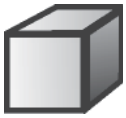
-v_ sk, lunf; / cDvf]/fsf]kfgL hDdf kfbf{lrofbfgLsf]eGbf sltn]w]/}cyjf yf]/}xG5 <

-u_ lrofbfgLsf]kfgL lunf;df vGofPkl5 lrofbfgLdf slt kfgL af‘sL /xG5 <

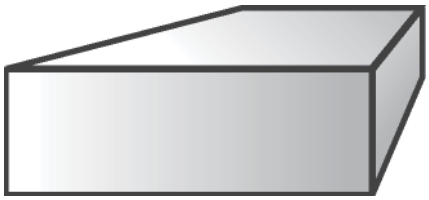
-3_ lrofbfgLsf]kfgLn]sltcf6f sk eg{;lsG5 / lrofbfgLdf slt af‘sL /xG5 <

5.7 cfotg (Volume)

;'ujsf] sf7sf] Anssf] nDaf0, rf8f0 / prf0 1/1 ;]ld= 5 .

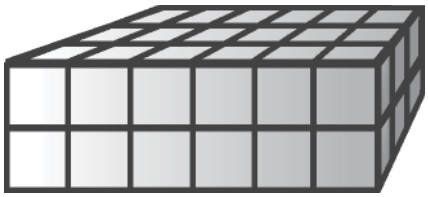


To;}n] o; sf] cfotg 1 3g ;]ld= x'G5 . nDaf0, rf8f0 / prf0 a/fa/ ePsf] j:thf0{3gfsf/ j:t'elg'G5 .



;'ujsf] sf7sf] Ans x]/f}+ To;sf] cfotg slt xf]nf <

o; Anssf] cfotg yfxf kfpg o;sf] nDaf0, rf8f0 / prf0df 1/1 ;]ld= df lrgf] nuf0{/]vfn] hf8f}+ . o;f] ubf{ bfof'sf] h:tf] lrq a'G5 M



ca oL 3]/fx¿af6 Ansnf0{6'jlf ug{]xf]eg]1 3g ;]ld= sf sltcf6f ;fgf Ansx¿ a'G5g\ lx;fa u/f}+M

nDaf0df ePsf ;fgf Ansx¿ = 6 cf6f

rf8f0df ePsf ;fgf Ansx¿ = 3 cf6f

prf0df ePsf ;fgf Ansx¿ = 2 cf6f

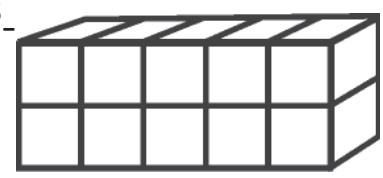
hDdf ;fgf Ansx¿sf] ;a}Vof = 6 x 3 x 2 cf6f = 36 cf6f .

To;}n] pSt Anssf] cfotg 36 3g ;]ld= 5 .

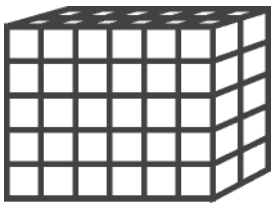
cEof;

1. lrqdf b]/fvf0Psf k]o]s if8dvf **(cuboid)** sf] cfotg slt 5, Psf0 ug]/ kQf nufpm M

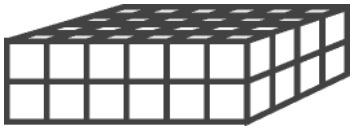
-s_

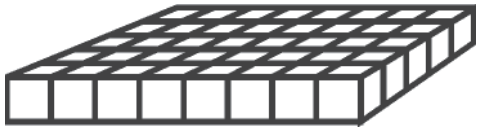


-v_



-u_ -3_





2. k|fKt ug{ ;Sg5 1 df lbOPsf k|of]hs j:t's|f]nDaf6, rf8f6 / prf6nf6{u6fg u/]/ x]/ . of]; ª\Vof / j:t's|f]cfotg Pp6f 5 <

5.8 tf]n (Weight)

lrqdf b]lvPsf tf]nsf ljleGg Psf6x¿ /fd|f]; u x]/ .

1 ls=uf= *500 uf=* *200 uf=* *100 uf=* *50 uf=*

t/fh' kpfu u/L 1 lsnf]uf]d -ls=uf=_ df sltcf6f 100 uf]dsf 9sx¿ xb'f /x]5g\ x]/ . To;/L g}1 ls=uf= df sltcf6f 500 uf=sf 9sx¿ xb'f /x]5g\ x]/ . 1 ls=uf= df 5 cf6f 200 uf]dsf 9sx¿ xg ;S5g\ yfxf kfpg t/fh'g}kpfu u/L x]/ .

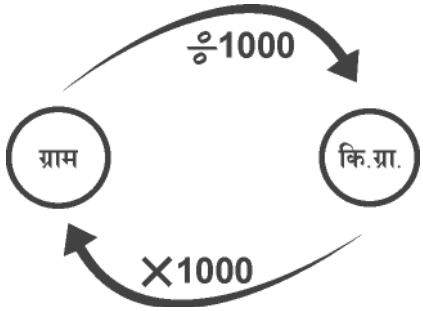
oL kpfux¿af6 ltdLx¿nf6{ 1 ls=uf = 1000 uf]d x6G5 eg] yfxf eof] . ca lgDglnlvt j:tx¿sf]tf]n yfxf kfpg sg 9s kpfu ug{plrt xf]nf, Psl5g ljrf/ u/ M

-s_ -v_ -u_

-3_

-a_

xfdLn]yfxf kfof}j:t'sf lsl;dcg';f/ ltgLx¿sf]tf}n yfxf kfpg ;xfpb}f 9sx¿ kb}fu ug{k5{. 1 lsnf]uf]ddf 1000 uf]d x©5 . t;y{ uf]d / lsnf]uf]dsf Psf0nf0{ Ps csf]df ¿kf©t/ ug{;ls©5 .



pbfx/0f 1

3 lsnf]uf]d **600** uf]ddf hDdf slt uf]d x©5 <

1 lsnf]uf]d = 1000 uf]d

To;}n] 3 lsnf]uf]d = 3 x 1000 uf]d = 3000 uf]d

/ 3 lsnf]uf]d 600 uf]d = (3000 + 600) uf]d = 3600 uf]d .

pbfx/0f 2

2780 uf]ddf slt lsnf]uf]d / uf]d x©5 <

1 lsnf]uf]d = 1000 uf]d

To;}n]

$$\begin{array}{r} 2 \\ 1000\overline{)\,2780} \\ -\,2000 \\ \hline 780 \end{array}$$

2780 uf]d = 2 lsnf]uf]d 780 uf]d

csf]tl/sfaf6 –

2780 = 2000 + 780

= 2 x 1000 + 780

2780 uf]d = 2 lsnf]uf]d 780 uf]d

pbfx/0f 3

3 lsnf]uf]d **700** uf]d / **5** lsnf]uf]d **600** uf]dnf0{Ps}7fpF'df hDdf kfbf{slt xG5 <

lsnf]uf]d	uf]d
3	700
+ 5	600
9	300

= 9 lsnf]uf]d 300 uf]d

pbfx/0f 4

5 lsnf]uf]d **700** uf]d / **2** lsnf]uf]d **890** uf]ddf slt tf]nsf]k|/s xG5 <

lsnf]uf]d	uf]d
4 ~~5~~	700
— 2	890
2	810

k|/s = 2 ls=uf= 810 uf]d

700 uf]daf6 890 uf]d g36]sfn]1 ls=uf= = 1000 uf]d ;fk6 lnP/ 700 uf]d;'ü hf]8\bf 1700 uf]d eof]. To;}n]ca 1700 uf]daf6 890 uf]d 36fpF'bf 810 uf]d af'S6L /xbf].

cEof;

1. uf]ddf ¿kfGt/ u/ M

-s_ 2 ls=uf= -v_ 5 ls=uf= -u_ 12 ls=uf= 50 uf]d

-3_ 3 ls=uf= 250 uf]= -ª_ 7 ls=uf= 750 uf]=

2. ls=uf= / uf]ddf kl/0ft u/ M

-s_ 1190 uf]d -v_ 1755 uf]d -u_ $3\frac{1}{4}$ lsnf]

3. hf]8 M

-s_ 3 ls=uf= 300 uf]= -v_ 8 ls=uf= 690 uf]=

+ 2 ls=uf= 550 uf]= + 7 ls=uf= 580 uf]=

-u_ 350 uf=

\+ 2 ls=uf= 690 uf=

-3_ 12 ls=uf= 986 uf=

\+ 894 uf=

4. 36fpm M

-s_ 8 ls=uf= 300 uf=

– 3 ls=uf= 520 uf=

-v_ 12 ls=uf= 375 uf=

– 10 ls=uf= 650 uf=

-u_ 7 ls=uf= 600 uf=

- 5 ls=uf= 776 uf=

5. **720** ufddf **1** ls=uf= k¥ofpg slt ufd yKgk5{<

6. Ps hf]/ a6sf]tfjh **910** ufd lyof]. tn'jf kmbf{**1** ls=uf= **120** uf= ku5 eg] slt tfjhsf]tn'jf ylkPsf]/x5 <

7. /fhh]**5** ls=uf= :ofp lsg]/ NofPsfdf **2** ls=uf= **270** uf= lauksf]/x5 eg] /fh';ú glauksf]:ofp slt af“SL /xbof]<

8. jg:klt l3p sDkgLåf/f pTkflbt Ps ls=uf= sf]knfl:6s a66fsf]l3pdf knfl:6s dfqsf]tfjh **70** ufd /x5 eg]knfl:6s;lxtsf]l3psf]tfjh slt xf]nf <

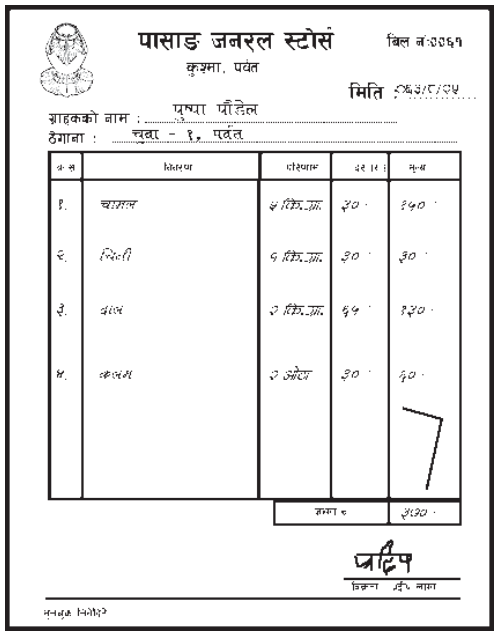
9. **1** ls=uf= **250** ufdsf b/n]kf“r hgfnfO{:ofp lbbf hDdf slt :ofp rflxPnf <

10. **1** ls=uf= **200** uf= c^u'/ rf/ hgfn]a/fa/ u/L af8]5g\. Pshgfsf]efudf slt ufd c^u'/ k¥of]xf]nf <

11. Pp6f k;nfn]**350** ls=uf= lrgL lsg]5g\. To;dWo]p;n]$189\frac{1}{2}$ ls=uf= lrgL a]r5g\eg]pgL;ú slt lrgL af“SL xf]nf < ls=uf= / ufddf pQ/ n]v .

kf7 6 lan / ah]6

klkfn]k;naf6 rfdn, bfn, lrgL lsg]kl5 ;fdfgsf];fydf k;n]h]Pp6f /l;b -lan_ klg lbof]. k;n]h]lbPsf]lan o:tf]lyof]M



पासाङ जनरल स्टोर्स

कुश्मा, पर्वत

बिल नं:०२७१

मिति २०७२/८/२५

ग्राहकको नाम : पुष्पा पौडेल

ठेगाना : चुवा - १, पर्वत

क.स	विवरण	परिमाण	दर रु।	जम्मा
१.	चामल	४ किलो	४०	१६०
२.	चिनी	१ किलो	३०	३०
३.	दाल	२ किलो	६१	१२०
४.	नुन	२ प्याकेट	३०	६०
			जम्मा रु	३१०

प्रदिप

विक्रय प्रतिनिधि

ca dflysf]lan x]/L tnsf k|fgx¿sf]pQ/ b]pM

-s_ klkfn]sg k;ndf ;fdfg lsg]sL /lx5g\<

-v_ klkfnf0{s;n];fdfg a]r]sf]/x5 <

-u_ pgn]sgsg ;fdfg lslg5g\<

-3_ pgn]hDdf slt /sd ltl/5g\<

-a_ Pp6f ;fwf/0f landf s]s]s'/fx¿ ;dfj]z x'b]/x5 <

-r_ ;fdfg lsg]/ lan lnb]f s]s]kmf0bf x'G5 xf]nf <

lzIf0f lgb]{zg M

cfk"m]NofP/ jf ljBfyL{x¿af6 lanx¿sf];"sng u/L jf:tljs lanx¿ b]vfP/ landf ;dfj]z ePsf ;a}zAbx¿sf]cy{:ki6 ul/lbgxf]\. kl/df0f / b/sf]cfwf/df hDdf dNo lgsfNg]tl/sf / landf ePsf c'Go ;'rgfx¿, o;sf kmf0bfx¿sf af/]df slffdf 5nkmn u/fpgxf]\.

cEof;

1. bfof'sf]lan k9L ;fwPsf k|fgx¿sf]pQ/ bp]m M

-s_ ;fdfg s;n]lsg}sf]xf]<

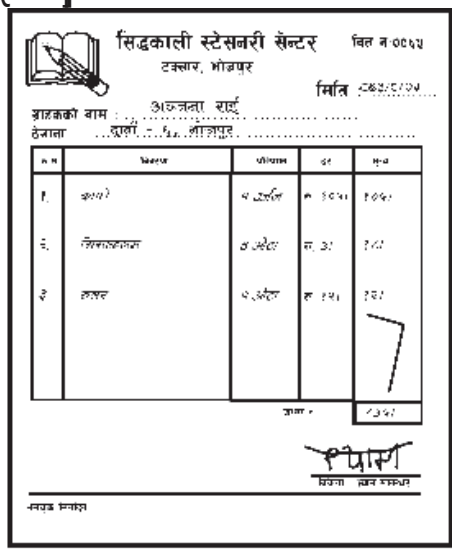
-v_ ;fdfgsf]lajltf sf]xf]<

-u_ cGhgfn]slt sfkL lsg}sL /lx5g\<

-3_ Pp6f l;;fsndsf]dNo slt /x5 <

-a_ c~hgfn];fdfg lsg}sf]k;nsf]gfd s]xf]<

-r_ c~hgfn]k;ndf hDdf slt ?lkof" ltl/5g\<



2. bfof'sf]lan x/L tn ;fwPsf k|fgx¿sf]pQ/ bp]m M

-s_ /Ltfn]kmnkmh vl/b u/}sf]k;nsf]gfd s]xf]<

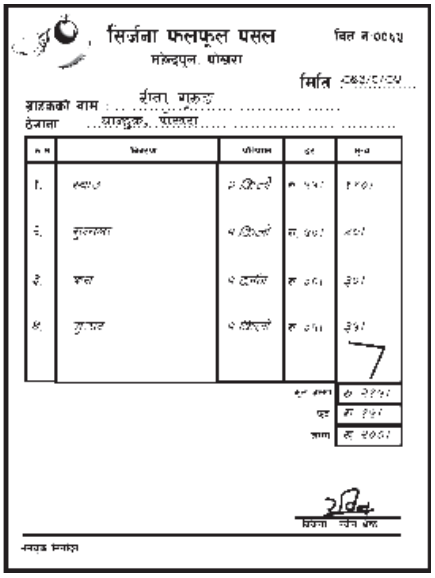
-v_ pgn]sg}sg kmnkmh vl/b ul/g\<

-u_ /Ltfn]lsg}sf]kmnkmhsf]hDdf dNo slt ePsf]lyof]<

-3_ k;n]hfO{ /Ltfn] hDdf slt ?lkof" ab|mfOg\<

-a_ kmnkmhsf] hDdf dNoeGbf k;n]h] lsg sd /sd lnPsf]xf]nf <

-r_ k;n]h]/Ltfnf0{bPsf]56 /sd slt /x5 <



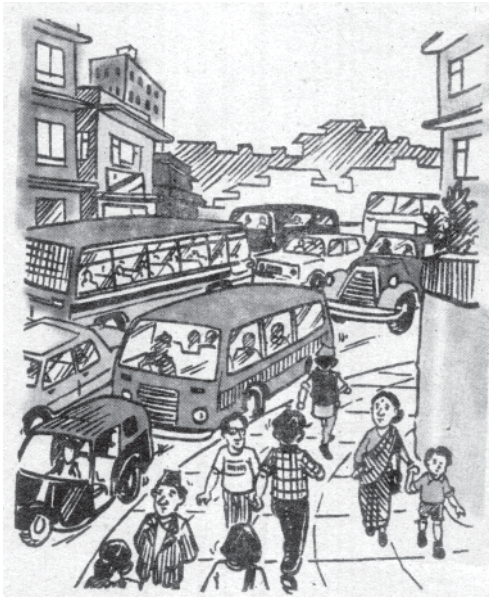
lzIf0f lgb|Zg M

jf:tljs lanx¿ -56, Eof6, s/ ;dfj]z gePsf_ b]vfP/ tL lanx¿ ;DaGwL klg ;'rgfx¿ lng]/ lbg]yk cEof; u/fpgxf]\.

kf7 7 tYofaWsZf:q (Statistics)

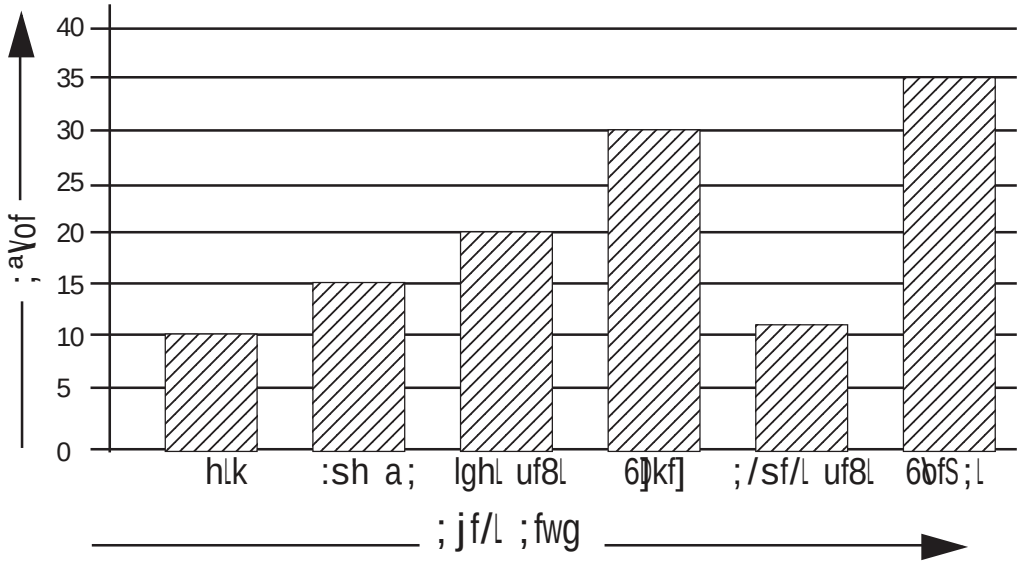
7.1 :tDe nfUvflrq

sf7df8f}sf] gof"; 8saf6 cfh laxfg gf}ahfpb]lv b; ah]6 Dd 10 cf6f hLk, 15 cf6f :sh a;, 20 cf6f lghL uf8L, 30 cf6f 6fofDkf], 12 cf6f ;/sf/L uf8L / 35 cf6f 6fofS;L u8]. o; hfgsf/Lnf0{ ;a}h]a%g]u/L s;/L k|t't ug]{xf]nf < hfgsf/Lnf0{ ;lhn}a%g] agfpg] Pp6f tl/sf tflnsf agfpg'klg xf]. pko{t hfgsf/Lnf0{tflnsfdf o;/L k|t't ug{ ;lsG5 M



hLk	:sh a;	lghL uf8L	6fOkf]	;/sf/L uf8L	6fofS;L
10	15	20	30	12	35

o;/L tflnsf agfP/ /fVbf w]/}s'/f a%g ;lhnf]xG5 . oxL hfgsf/Lnf0{:tDe nfUvflrqdf b]vfpb\f thgf ug{ce\m w]/};lhnf]k5{. dflysf] hfgsf/Lnf0{:tDe nfUvflrqdf b]vfpb\f o:tf]xG5 M



dflysf]:tDe nfUvflrqsf]cfwf/df lgDgInlvt k|fKtgsf]hjfkm lbg]kof; u/ M

-s_ Ps 306fleq ;aeGbf a9L sfg ;jf/L ;fwg rnfpF5 <

-v_ ;aeGbf sd rNg]; jf/L ;fwg sfg xf]<

-u_ :tDesf]prfOn]s]hgfp5 <

-3_ :tDe nfUvflrqdf 7f8f]/ t]if]/fVvfn]s]s]hgfPsf 5g\<

-ª_ 7f8f]/fVvfn]Pp6f ju{a/fa/ slt ;jf/L ;fwg lnOPsf]/xf]5 <

o;/L Pp6}u0f ePsf j:tx¿sf]thgf ugk{bf{:tDe nfUvflrq w/fpkof]uL xG5 . Ps} emns xbf{w/fpg}s"/fx¿ yfxf kfpg ;lsG5 . kl/jf/sf ;b:ox¿sf]prfO, tfn, sfg} ljBfnosf slffut ljBfyL{;ªVof, ;/sf/L lgsfodf nufgL / pTkfbgsf s"/fx¿, xKtfsf ;ft lbgdf ePsf]jiff{ tfkjld cflbsf]thgf ugk{bf{:tDe nfUvflrqsf]kof]u ul/G5 . oL afx]s s]s]sfddf kof]u xfg;S5, slffdf 5nkmn u/ .

cEof;

1. Pp6f ljBfnosf 100 hgf ljBfyL{¿nfO{ltdLnfO{æ;aeGbf dg kg]{ljifo sfg xf]<Æ egfF ;fWbf lgDgcg';f/sf]pQ/ kfOof]M

dg kg]{ljifo	gk|fnL	ul0ft	cªvu|nL	lj1fg	:jf:Yo	el/f]n
ljBfyL{;ªVof	15	30	10	25	15	5

o; tflnsfsf]hfgsf/LnfO{7f8f]/fVvf -clf_ df 1 sf7f =10 hgf ljBfyL{lnP/ :tDe nfUvflrq agfpm .

2. uPsf]Ps xKtfdf slff 4 sf 50 hgf ljBfyL{¿dWo]u{ksfo{gug]{ljBfyL{sf] ;ªVof tflnsfdf bfVvfOPsf]5 . 7f8f]clfdf 1 sf7f =2 ljBfyL{lnO{:tDe nfUvflrq lvr M

af/	cfOt	;fdl	dªvun	a'w	laxL	z'jn
u{ksfo{gug]{ ljBfyL{;ªVof	6	7	10	3	6	2

n]vflrq xf]/L lgDglnlvt k|fgsf]pQ/ bfpm M

-s_ ;aeGbf a9L ljBfyL{n]sg lbg u|ksfo{u/]sg\<

-v_ ;aeGbf sd ljBfyL{n]u|ksfo{gu/]sf]sg lbg xf]<

-u_ x|ktfel/df hDdf slt hgfn]u|ksfo{u/]5g\<

3. slff 4 sf ljBfyL{¿sf]prfO ;]ld= :sfndf tnsf]tflnsfdf lbOPsf]5 M

prfO	102 ;]ld=	103 ;]ld=	104 ;]ld=	105 ;]ld=	106 ;]ld=
ljBfyL{ ;aVof	5	10	15	12	8

pko{t tflnsfcg';f/ ljBfyL{sf]prfO bfvfpg]:tDe n]vflrq lvr / lgDglnlvt k|fgsf]pQ/ bfpm M

-s_ ;aeGbf a9L ljBfyL{sg prfOsf /x]5g\<

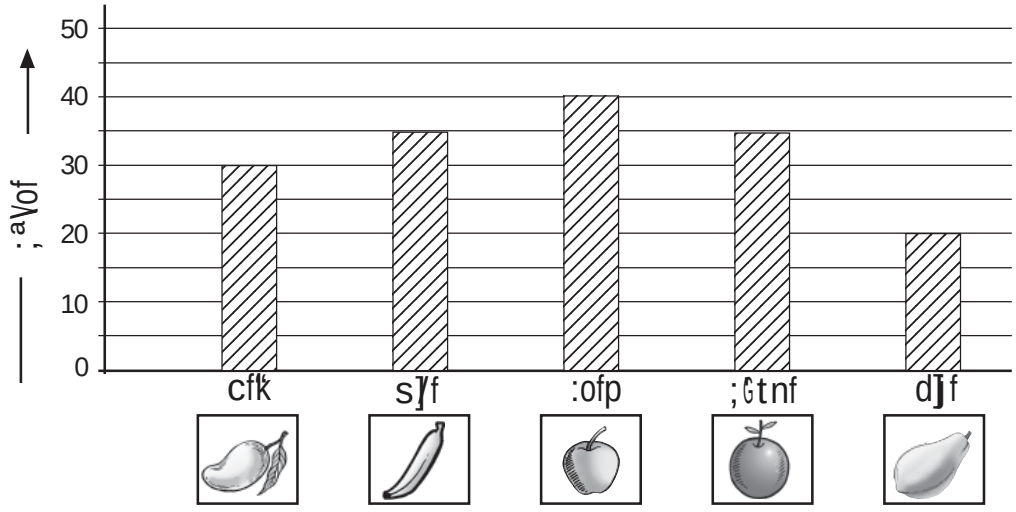
-v_ ;aeGbf sd ljBfyL{sg prfOsf /x]5g\<

-u_ 104 ;]ld= eGbf a9L prfO ePsf ljBfyL{¿nfO{cUnf ljBfyL{dfGof]eg]slffdf slthgf cUnf ljBfyL{/x]5g\<

-3_ slt k|ltzt ljBfyL{sf]prfO 102 ;]ld= /x]5 <

-a_ 105 ;]ld= eGbf sd prfO ePsf slt hgf ljBfyL{¿ /x]5g\<

4. Pp6f jgef]hdf ljBfyL{¿n]lgDglnlvtcg';f/ kmnkmh vfP M



dflysf]:tDe n]vflrq /fd[]ü k9 / lgDglnlvt k|Zgsf]pQ/ bp]m M

-s_ slt lsldd sf k|/s–k|/s k|nk|hx¿ jgef]hdf nluPsf /x]5g\<

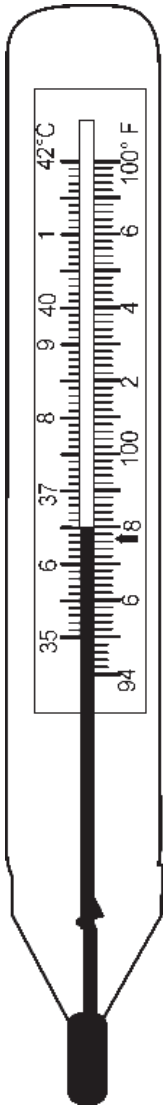
-v_ ;aeGbf a9L / ;aeGbf sd sg k|nk|h kpf]u eP5 <

-u_ sg bO{k|nk|hx¿ a/fa/ ;a\ofdf kpf]u ePsf /x]5g\<

-3_ Pshgf ljBfyL{n]sg}Pp6f dfq k|nk|h vfPsf]/x]5 eg]hDdf slt hgf ljBfyL{jgef]h uPsf /x]5g\<

7.2 ydf{d6/ k9\g]

slxn]d6'g}sfDg]u/L hf8f]xG5 . slxn]6G6nfk'/ 3fd nfu]/ lr6lr6 kl;gf cfp5 . df}d kl/jt{gsf] k|n:j¿k tfkj|d a9L cyjf 36L e0lbG5 . ltdLn] /]8of] cyjf 6]nlehgdf ;dfrf/sf] cGTodf ljleGg 7fp"sf]tfkj|d eg]sf];Gg]u/]sf 5f}xf]nf . /]8of];Gg] 6]nlehg x]g{]n]gkfnsf ljleGg 7fp"df sxf"a9L udL{/ sg 7fp"df a9L hf8f]eof] yfxf kfpg]u5{g\. o:tf] tfkj|d gfKg]oGqnf0{ydf{d6/ (Thermometer) elgG5 .

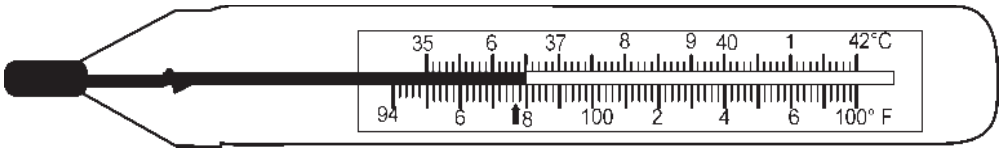


bfof"sf]lrq ydf{d6/sf]xf]. lrqdf sfnf]nuf0Psf]efun] s]hgfp5 < ydf{d6/df /x]sf]kf/fn]f0{sfnf]b]vf0Psf] 5 . of]tfkj|dcg';f/ 36a9 xG5 . tftf]df a95 / lr;fdf 365 . o;df 7f8f]t/ bO{t/ nx/};a\ofx¿ n]vPsf 5g\. afofl't/sf]7f8f]nx/n]sg}klg 7fp"sf] tfkj|d ;]N;o;\(Celsius) :s]ndf / bfofl't/sf]7f8f] nx/n]k|/]gxf06 (Fahrenheit) :s]ndf b]vfpg]u5{. tfkj|dsf]gfknf0{°C -l8ul| ;]N;o;_ cyjf °F -l8ul| k|/]gxf06_n]hgfpg]ul/G5 . lrqdf /fd/L x]L lgDglnlvt k|Zgsf]pQ/ bp]m M

- ydf{d/6s]4°C ;]N;o;n]slt °F k|/]gxf06 hgf0/x]5 <
- ydf{d6/df k|/]gxf06 :s]ndf ;aeGbf sd tfkj|d slt l8ul|;Dd b]vf0Psf]/x]5 <

lrqdf kf/fh]tfkj|d 36.5° ;]N;o; b]vf0Psf]5 . o;sf]gfk k|/]gxf06 :sfndf slt /x]5 <

tnsf]lrq x]/ M



of]dflg;sf]tfkj|d -Hj/f] gfKg]ydf{d6/ xf]. ydf{d6/df kf/fh]98° k|/]gxf06 b]vfPsf]5 . z/L/df Hj/f]cfpb]f of]a9]/ 100°, 104°, 108° ;Dd klg k|U5 ;S5 . ltdLx¿ n]slxn]sfxL"8fS6/n]la/fdLsf]Hj/f]gfksf] b]vfsf 5f}< Hj/f]gfKg'eg]sf] z/L/sf]tfkj|d yfxf kfpg'xf]. of]tfkj|d 98°F eGbf tn cyjf dfly xg'b'j}/fdf] xf]Og .

cEof;

1= slffsf]7fdf /fvfsf]ydf{d6/nf0{k|ltbg laxfg 10 ah]/ lbp";f]3 ah]lt/ x]/ . laxfg / lbp";f]ydf{d6/n]Pp6}c^'s b]vfp5 ls k|/s-k|/s b]vfp5, l6Kb}hfp| .

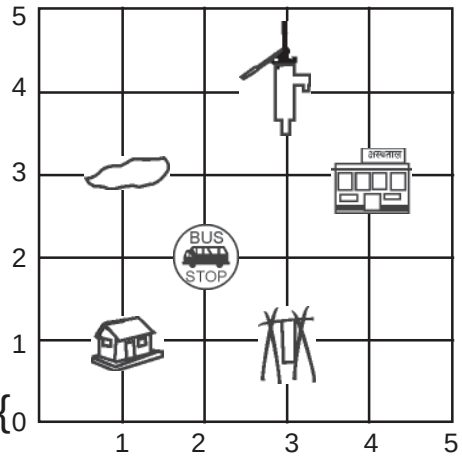
2= cEof; 1 sf]lj|ofsnfk Ps xKtf;Dd ub}hfp| / xKtfel/sf]tfkj|d b]vfpg] u/L Pp6f laxfgsf]tfkj|d / csf{lbp";fsf]tfkj|d b]vfpg]2 cf6f :tDe n]vflrq lvr . o;nf0{Pp6}:tDe n]vflrqdf b]vfpg ;lsPnf <

3. ltd|]3/df Hj/f]gfKg]ydf{d6/ 5 eg]laxfg p7fg]alQs}z/L/sf]tfkj|d gfk]/ Pp6f sfuhdf n]v . Ps xKtf;Dd gf6 u/]sf]tfkj|d x]/ . of]Pp6}5 cyjf k|/sk|/s 5 <

7.3 j|d hf]8fx¿ (Ordered Pairs)

tnsf]lrqnf0{/fdf]|ü x]/ . lrqdf t]ff{/]vf / 7f8f]/]vf sfl6Psf]7fpb]f o n]vPsf] 5 . o af6 t]ff{t/ cufl8 a9L}hfb]f j|dz| c^'sx¿ 1, 2, 3, 4 eGbg ;lsG5 . To;/L g}7f8f]/]vfdf dflylt/ a9L}hfb]f j|dz| 1, 2, 3, 4 eGbg ;lsG5 .

ca lrqdf n]vPsf]lkªdf hfgk¥of]eg]t], f]t/ tLg Psf0 lx8]/ dflylt/ Ps Psf0 lx8\ygk5{. o; nf0{xfdL jl|dhf8f ;ª\of (3,1) n]hgfp5f}. jl|dhf8f ;ª\of (3,1) sf] cy{t], f]t/ 3 Psf0 / 7f8f]t/ 1 Psf0 eG5g]xf]. o; lrqdf ePsf ;a}:yfgsf nflu klxnf t], f]t/ To;kl5 7f8f]jl|d dfG5g]xf]eg]lrqdf 3/sf]:yfg hgfpg]jl|dhf8f (1,1) xf]. rf/sf]:yfg hgfpg]jl|dhf8f (1,3) xf].



o;/L g}tnsf :yfg hgfpg]jl|dhf8f ;ª\of n\yg];S5f}<

-s_ wf/fsf]l:ylt hgfpg]jl|dhf8f

-v_ a; :6ksf]l:ylt hgfpg]jl|dhf8f

-u_ c:ktfnsf]l:ylt hgfpg]jl|dhf8f

jl|dhf8fdf cªsx¿sf]jl|d Psbd}dxEjk0f{o xG5 lsgeg]dflysf]lrqdf jl|dhf8f (1,3) elgof]eg]rf/df klG5 hals jl|dhf8f (3,1) elgof]eg]lkª ePsf]7fpdf klG5 . To;}n]jl|dhf8fdf (1,3) / (3,1) Psbd}k|/sk|/s l:ylt hgfpg]jl|dhf8fx¿ xg\. jl|dhf8fnf0{;dtn ;txdf ljGbx¿sf]l:ylt hgfpgsf nflu k|of]u ul/G5 .

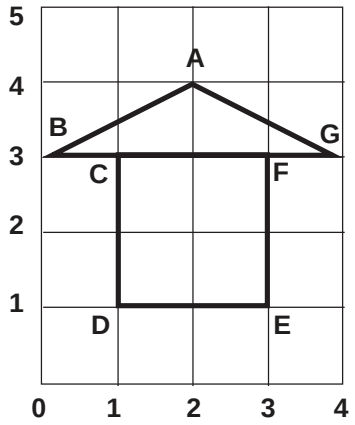
;ü}sf]lrqdf ljGb'A hgfpg]jl|dhf8f (2, 4) xf]eg]–

-s_ B hgfpg]jl|dhf8f slt xf]<

-v_ F hgfpg]jl|dhf8f slt xf]<

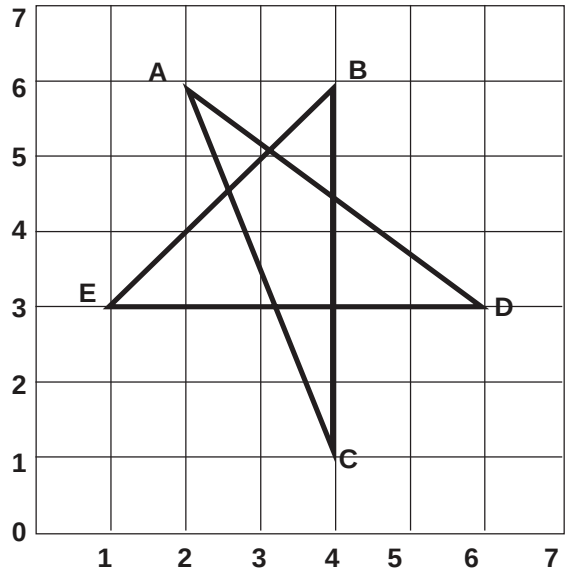
-u_ jl|dhf8f (3,1) n]sg ljGb'hgfPsf]5 <

-3_ jl|dhf8f (4,3) n]sg ljGb'hgfPsf]5 <

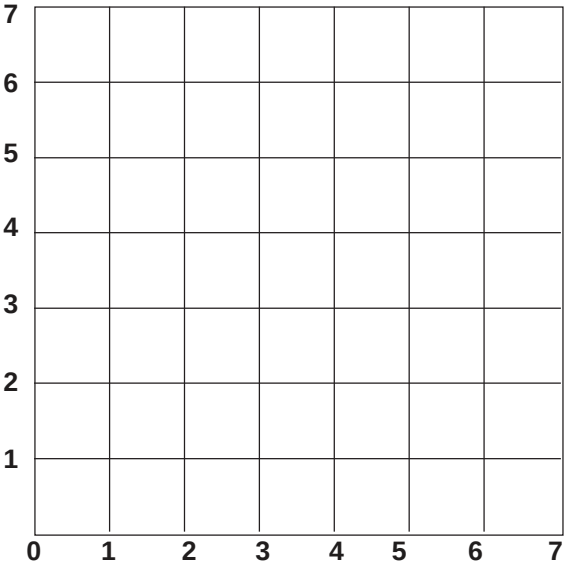


cEof;

1. ;'ü}sf]lrqdf ljGbx¿ A, B, C, D, E sf]l:ylt hgfpg]jl|dhf}Bf ;aVofx¿ n]v'M



2. lbOPsf] juf{aLst sfuhdf jl|dhf}Bfx¿ (0,4), (2,5), (4,5), (5,4) (6,6), (6,1) (5,3), (4,2), (2,2), (1,3) (2,4) ePsf ljGbx¿ jl|dz'M A, B, C, D, E, F, G, H, I, J, K nfO{caVsg u/L jl|d}ü hf}B .o;/L hf}Bdf K nfO{A ;'ü hf}Bg gehf .ca s}sf] lrq aGof]atfp'M .



lzIf0f lgb]{zg'M

tYofaLszf:q k9fpbf ;'rgfx¿ k9g ;Sg] lbPsf ;'rgfx¿nfO{n]vflrqdf JoSt ug{;Sg] ;Lk ljsf; ug{oxf"lbPsf ljl|ofsnfkx¿ ;faLs]lts dfq xg\. o;sf cltl/St lzIfsn] ljBfnodf ePsf sIffut ljBfyL{ljj/0f, xKtfel/sf lbgx¿df sIffdf pkl:yt xg]ljBfyL{ ljj/0f, xKtfel/sf lbgx¿df sIffdf cgkl:yt xg]ljBfyL{ljj/0f h:tf cfÇg}jftfj/0fdf k|Kt xg]/ ljBfyL{kl/lrt /x]sf cfS8f ;aLsng u/L tflnsLs/0f, :tDe n]vflrqdf JoSt ug{nufpg ;Sgxg5 .To;/L g}jl|dhf}Bfsf nflu k'/sk'/s cfs[t hgfpg]jl|dhf}Bf lgdf{0f u/L ;f]xLcg';f/ k9g]jf caLsg ug]{h:tf ljl|ofsnfkx¿ u/fpg ;Sgxg5 .

kf7 8 ;dX (Sets)

8.1 kl/ro

k9 / l;s M

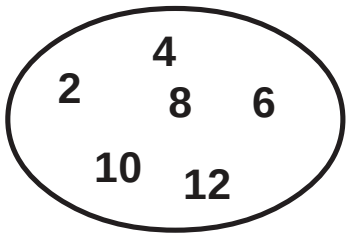
/fd ;ltf ufpkL

of];dxnfO{'sd6fsd6Lsf];dX' eGg ;lsG5 lsglS /fd, ufpkL / ;ltf Pp6};dxsf ;b:o xg\. s]of];dhfO{'cUnf dflg;x¿sf];dX' eGg ;lsPnf <

lrqdf lbOPsf /fd, ufpkL / ;ltfdf /fd ;ltfeGbf cUnf]/ ufpkLeGbf xfpr]5 . ca Pp6f ;dxnfO{'cUnf dflg;x¿sf];dX' egf] kl/eflift u¥ofpeg]To; ;dxdf /fd k5{lsgeg]/fd ;ltfeGbf cUnf]5 .

Tof];dxdf /fd kbfg lsgeg]ufpkLeGbf xfpr]5 . o;/L Pp6f ;dxdf Psk6s /fd k¥ofpcsf{k6s k/fg . o;sf]cy{of];dxsf ;b:ox¿ /fd/L kl/eflift ePgg\. To;}n]o:tf vfn];a\sng ;dX xg ;Sbfg .

pbfx/0f 1



o; ;a\sngdf 2 b]lv 12 ;Ddsf hf]/ ;a\of dfq ;a\slnt ul/Psf]5 . o;nfO{13 eGbf ;fgf hfpB ;a\ofsf];dX eG5g\.

ca o; ;dxdf 3 kbfg, lsg < lsgeg]3 lahf]/ ;a\of xf]/ o; ;dxdf 14 klg kbfg, lsgeg]14 hf]/ ;a\of eP klg ;dxleq 13 eGbf ;fgf hf]/ ;a\of dfq 5g\. o;/L agfO;skl5 To; ;dxleq s]k5{/ s]kbfg eGg]:ki6 ePsf]xgk5{.

;dX egf}sf]/fdf]t\ kl/eflift ul/Psf]j:t\sf];a\sng xf].

Pp6f ;dxleq hlt j:tx¿ k5{g\ tL j:tx¿ To; ;dxsf ;b:o xg\. /fdsf] kl/jf/df xl/, eujtL, /fd, /fdljnf;, zLnf, lzj / kf;fª u/]/ ;ft hgf 5g\. /fdsf]kl/jf/ Pp6f ;dx eof]. o; ;dxdf xl/ ;b:o xf], eujtL ;b:o xf]. To:t} ;dxsf c¿ ;b:ox¿ sf]sf]xg\< t/ e6]6];dxsf];b:o xf]Og .

cEof;

1. tn lbOPsf egfOx¿ ;dx xg\jf xf]Ogg\, 56\bfpm / ;dxsf ;b:ox¿sf]gfd nv]/ M

   -s_ xKtfsf ;ft af/x¿sf];dx

   -v_ 1 bv]/ 10 ;Ddsf ;ªVofx¿sf];dx

   -u_ slff 4 sf cUnf ljBfyL{x¿sf];dx

   -3_ slff 4 sf ljBfyL{x¿sf];dx

   -ª_ sfnf]skfn ePsf s6LLx¿sf];dx

   -r_ cªVuf]hL :j/ j0f{x¿sf];dx

   -5_ cªVuf]hL j0f{dfnfsf clf/x¿sf];dx

   -h_ Hofldlt afs;df ePsf ;fdu|x¿sf];dx

   -´_ w]/}plkPg ;Sg]ljBfyL{x¿sf];dx

2. tnsf ;dx;DaGwL egfOx¿ 7Ls cyjf a]7Ls s]xg\, 56\bfpm M

   -s_ xKtfsf ;ft lbgsf];dxdf Pp6f ;b:o cf0taf/ xf].

   -v_ ljBfno, clkm; rNg]lbgx¿sf];dxsf]Pp6f ;b:o zlgaf/ xf].

   -u_ hf]/ ;ªVofsf];dxdf ;ªVof 3 k5{.

   -3_ Hofldtlo cfsf/sf];dxdf lqeh ;b:o xf]Og .

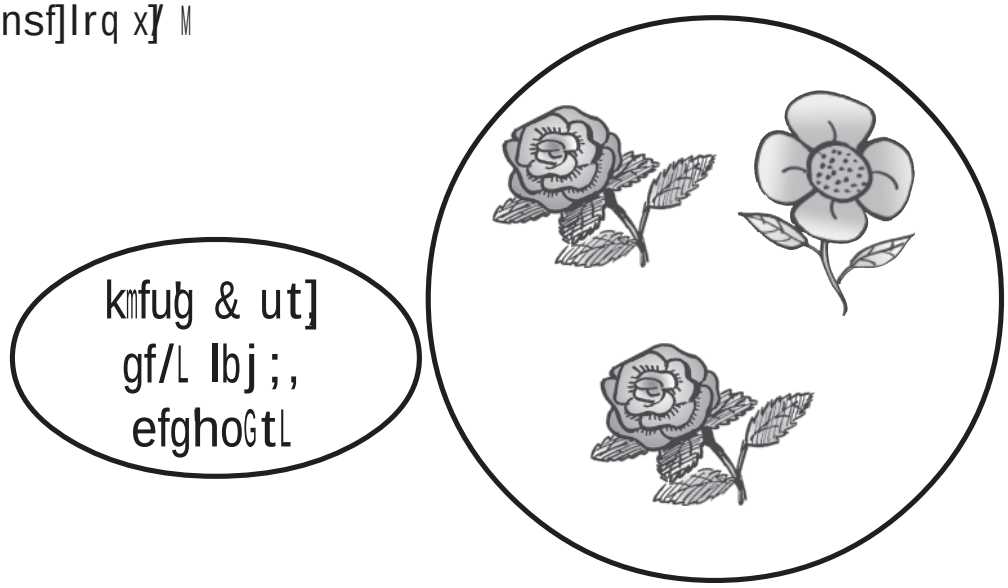
   -ª_ /fhsf]kl/jf/df zLnf, s[0f, lzj / s}hfz 5g\. s[0f kl/jf/sf];b:o xf].

   -r_ ;b:osf];ªVof Ps, bO{cyjf ;fdGbf a9L klg xg;S5 .

   -5_ kmlg{r/sf];dxdf sfnf]kf6L ;b:o xf]Og .

8.2 ;dX n]vg]tl/sf

tnsf]lrq x]/ M



lrq 's' lrq 'v'

lrq 's' df kmfug & ut] khftGq lbj;, gf/L lbj; / efghoGtLnfO{3]/fleq kfl/Psf]5 . kmfug & ut] gf/L lbj; tyf efghoGtLn]/fli6« kj{¿sf] ;dX hgfp5g\ . To;/L g}lrq 's' df kmhx¿nfO{3]/fleq /flvPsf]5 . o;/L j:tX¿nfO{ 3]/fleq /fv]/ 3]/fleq k/]sf]hltnfO{;dXsf];b:osf ¿kdf lng ;lsG5 . of]klg ;dX n]vg]Pp6f tl/sf xf].

;dX n]vg]csf{tl/sfdf ;dXsf ;b:onfO{3]/fleq g/fv]/ hu]sf]7 {} leq /flvG5 / k]o]s ;b:onfO{cNklj/fd -,_ n]56\bfOG5 . tnsf]pbfx/0f x]/ M

– xKtfdf ljBfno rNg]lbgx¿sf];dX . o;nfO{n]vbf –

{ cfOtaf/, ;fdaf/, d^\unaf/, a'waf/, laxLaf/, z'jlaf/ } u/]/ n]vG5 .

– 1fg]Gbox¿sf];dX – { cf'vf, gfs, sfg, lha[, 5fnf }

o;/L hgfPsf];dXdf s]s]j:tX¿ k5{g\ ltgLx¿nfO{hu]sf]7leq k]o]s j:t' -;dXsf ;b:o_ nfO{cNklj/fd -,_ n]56\bfP/ n]vg]tl/sfnfO{;'rLs/0f ljlw (Listing Method) eG5g\.

cEof;

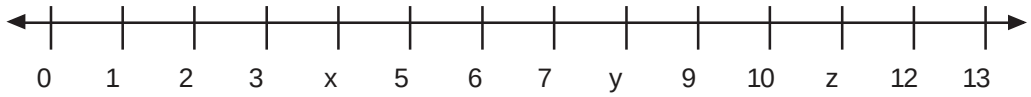
tn lbOPsf k]oj]s ;dXdf kg]{;b:ox¿nfO{;dX n]Vg];'rLs/0f ljlw kpfu]u u/L n]v M

1. gk]kfnsf ;a}c~rnx¿sf];dX
2. sIff rf/df kl9g];a}ljifox¿sf];dX
3. 1 b]lv 10 ;Ddsf lahf]/ ;a}Vofx¿sf];dX
4. ca}uhL j0f{dfnfsf clGtd tLgcf6f cIf/x¿sf];dX
5. gk]kfnsf ;x/x¿sf];dX
6. 1 b]lv 10 ;Ddsf /f]dg ;a}Vofx¿sf];dX
7. ca}uhL j0f{dfnfsf :j/j0f{x¿sf];dX
8. gk]kfnL j0f{dfnfsf kl5Nnf kf"r cIf/x¿sf];dX
9. ca}uhL j0f{dfnfsf klxnf tLg :j/x¿sf];dX
10. gk]kfnsf]/fli6«o e"G8fdf kpfu]u ePsf /a}x¿sf];dX

kf7 9 aLhul0ft (Algebra)

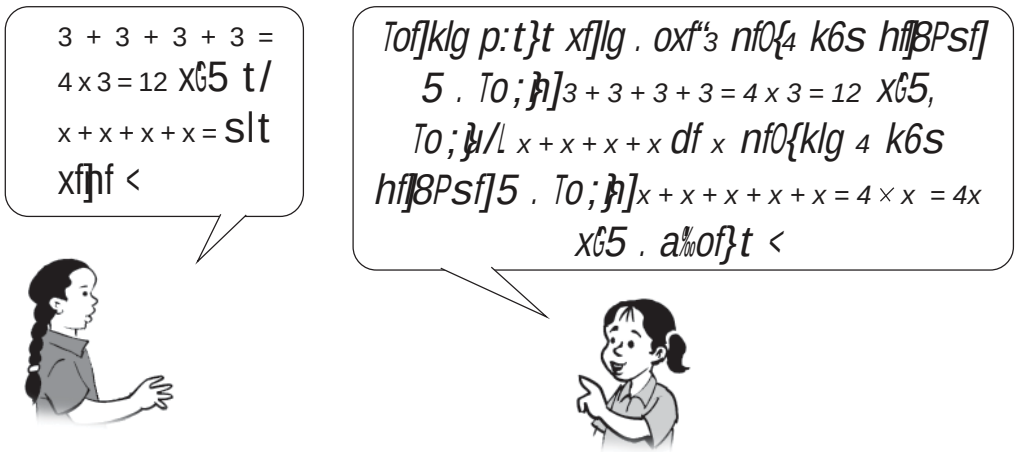
9.1 rn / dfg (Variable and Value)

tn lbOPsf] ;aVof /]vfdf x, y / z n]vPsf] 7fpdf sgsg ;aVof /fVgknf{ cfÇgf] sfkLdf n]v M

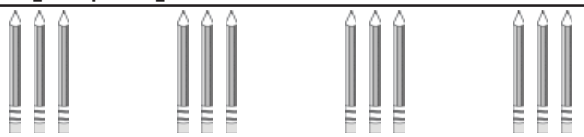


x = □ y = □ z = □

aLhul0ftdf ;aVofsf] 7fpdf clf/x¿ jf sg};aVs]x¿ /fVg ;lsG5 . ;aVofsf] 7fpdf /flvPsf]clf/ jf ;aVs]nf0{rn/flz (Variable) elgG5 .



tnsf]lrqdf x]/ M



3 + 3 + 3 + 3 = 4 x 3 = 12

tLg-tLgcf6f l;;fsndsf 4 ykf = 12

x + x + x + x = 4 x X = 4x

x l;;fsndsf 4 a66f = 4x

To:t}

y + y + y = 3 x y = 3y x¶5 .

oxf“y tLgk6s hf]8Psf]5 . bf]xf]/Psf]k6snfO{y sf]cufl8 n]vG5 . 3y df y sf] cufl8 n]vPsf]3 nfO{y sf]u0ff^as elg¶5 .

tnsf kbx¿df u0ff^as slt slt xf] vfnL sf7fdf n]v M

6m df m sf]u0ff^as = □

4p df p sf]u0ff^as = □

7x df x sf]u0ff^as = □

5a df a sf]u0ff^as = □

pbfx/0f 1

a = 3 eP, a + 4 sf]dfg lgsfn –

a + 4

= 3 + 4 [a sf]7fpd‘f 3 /fVbf]

= 7 pQ/

pbfx/0f 2

p = 7 eP, 13 - p sf]dfg slt x¶5 <

13 - p

= 13 - 7 [p sf]7fpd‘f 7 /fVbf]

= 6 pQ/

pbfx/0f 3

a = 3 / b = 4 eP 2a + 5b sf]dfg slt x¶5 <

2a + 5b

= (2 x a) + (5 x b) [2a = 2 x a / 5b = 5 x b xgfn]]

= (2 x 3) + (5 x 4) [a sf]7fpd‘f 3 / b sf]7fpd‘f 4 /fVbf]

= 6 + 20 = 26 pQ/

cEof;

1. olb, **a = 5, b = 3, c = 4** / **d = 0** eP dfg lgsfn M

-s_ a + 3 -v_ b + c -u_ 6 - a -3_ 3b + 2 -a_ 2b - 3d

-r_ ab - bc -5_ ab -h_ bc -´_ cd -`_ a + b + c

-6_ a - b + c -7_ 2a - (b + c)

2. olb, x = 5 eP lrqdf lbOPsf k]o}s /]vfv08sf]nDaf0 slt xf]nf <

-s_ x ;}ld= x ;}ld= 5 ;}ld=

-v_ 2x ;}ld= 5 ;}ld=

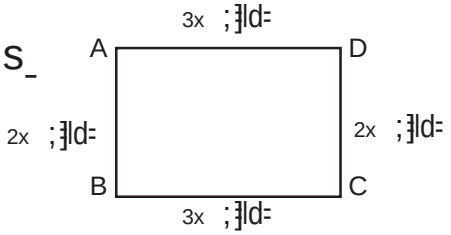
-u_ x ;}ld= 20 ;}ld=

-3_ 3x ;}ld= 2 ;}ld=

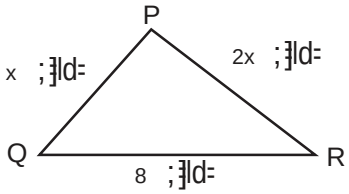
-a_ x ;}ld= x ;}ld= x ;}ld= x ;}ld= 2x ;}ld=

3. olb, **x = 3** eP lrqdf lbOPsf k]o}s cfs[tsf]kl/ldlt -3]/f_ sf]nDaf0 lgsfn M

-s_



-v_



9.2. aLhLo kb tyf cleJo~hs **(Algebraic Terms and Expressions)**

/fh';t x uRrf lyof]. p;sL cfdfn]5 cf6f uRrf ylklbgeof]. /fh';t ca x + 5 uRrfx¿ eP . zLnf;t ?= y lyof]. ?= 10 sf]snd lsg]kl5 ca zLnf;t ?= (y- 10) af‘sL /xbf]. oxf“ x, 5, y, 10 cflbnf0{aLhLo kb (Algebraic Terms) eG5g\.

olb aLhLo kbx¿sf aLrdf ‘±’ jf ‘–’ lrÅgx¿ ;dfj]z ePsf 5g\eg]To;nf0{ cleJo~hs (Expression) eGb5g\. dflysf pbfx/0fdf x + 5, (y - 10) cflb aLhLo cleJo~hsx¿ xg\. oL b'j}cleJo~hsdf slt slt kbx¿ 5g\<

kb x df kb 5 hf8bf x + 5 ePsf]5 . To;}n] x + 5 df b0{kbx¿ hf8g]sfd ePsfn]of] b0{kbLo cleJo~hs xf]. To;}u/L y - 10 klg b0{kbLo cleJo~hs g}xf].

o;/L Pp6f kbdf csf{kb hf8bf cyjf 36fpbf b0{kbLo cleJo~hs aGbf /x5, xf]g t <

;'/h;ú x / ;f}e;ú 3x uRrf 5g\. b'j}ú hDdf 4x uRrf eP . oxf"x, 3x / 4x Pskb Lo cleJo~hs xg\.

To;}n] aLhLo cleJo~hsdf Ps, b0{jf b0{eGbf a9L kbx¿ klg xg ;S5g\.

-s_ x, y, 5x, 3z, 4 cflb Pskb Lo cleJo~hs xg\.

-v_ x + y, x - y, 3a + 4b cflb b0{kb Lo cleJo~hs xg\.

-u_ x + y + z, 2a + 3b + 4c, p + 2q + 3r cflb tLgkb Lo cleJo~hs xg\.

cEof;

lbOPsf cleJo~hsdf slt–slt kbx¿ 5g\, nfv M

-s_ 3x -v_ 5y -u_ m -3_ 2x + y -a_ 4z - z -r_ 5m - 3n

-5_ x + y + z -h_ 3 - 2x + 5y -´_ 10 - p - q -`_ a - b + c + d + e

9.3 ;hftLo / ljhftLo kbx¿ (Like and Unlike Terms)

xf], k9 / 5nkmn u/ M

5 :ofp

7 :ofp

klxnf]8fnLdf 5 cf}f :ofpx¿ 5g\.

bf];f]8fnLdf 7 cf6f :ofpx¿ 5g .

b'j}8fnLdf Ps}hftsf j:tx¿ -:ofp_ 5g\. ltgLx¿ ;hftLo j:t'eP .

ca, :ofpsf]7fpdf rn/flz 'a' /fv]/ n]vbf

klxnf]8fnLdf ePsf :ofpx¿ = 5a

/ bf];f]8fnLdf ePsf :ofpx¿ = 7a n]vg ;lsG5 .

5a / 7a s:tf kbx¿ xg\<

b'j}8fnLdf ePsf :ofpx¿ pxL j:t'cyf{t\ ;hftLo j:t'xg\eg]tL j:tx¿ hgfpg]kbx¿ 5a / 7a klg ;hftLo kbx¿ g}xg\. xg}g t <

5 :ofp

4 ;Gtnf

oxf;" klxnf]8fnLdf 5 cf6f :ofpx¿ 5g\.

bf];f]8fnLdf 4 cf6f ;Gtnfx¿ 5g\.

b'j}8fnLdf k|/s hftsf -ljhftLo_ k|nx¿ 5g\.

ca, dflysf]pbfx/0fdf h:t}:ofpsf]7fpdf 'a' / ;Gtnfsf]7fpdf 'b' rn/flz k|of]u u/L n]vbf M

klxnf]8fnLdf ePsf :ofpx¿ = 5a

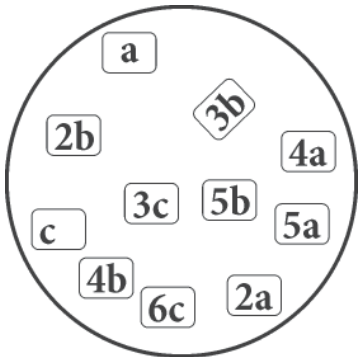
bf];f]8fnLdf ePsf ;Gtnfx¿ = 4b

5a / 4b s:tf kbx¿ xg\t <

klxnf]8fnLdf ePsf :ofpx¿ / bf];f]8fnLdf ePsf ;Gtnfx¿ k|/s k|/s hftsf -ljhftLo_ ePsfn]ltgLx¿nf0{hgfpg]kbx¿ 5a / 4b klg ljhftLo kbx¿ xg\.

P6}u0f ePsf j:tx¿nf0{;hftLo j:tx¿ elgG5 . k|/s u0f ePsf j:tx¿nf0{ ljhftLo j:tx¿ elgG5 . To;}u/L, P6}rn/flz ePsf kbx¿nf0{;hftLo kbx¿ / k|/s rn/flz ePsf kbx¿nf0{ljhftLo kbx¿ elgG5 .

tnsf]lrqdf ;hftLo / ljhftLo kbx¿ n]lvPsf kQLx¿ 5bf;ld; kf/] b]lvf0Psf] 5 . ;f]lrqdf a, b / c ePsf kbx¿ slt sltcf6f 5g\ eg ⅿ



;hftLo kbx¿sf]hf8

pbfx/0f 1

3a / 4a hf8

xfdLnf0{yfxf 5 ⅿ

3a = a + a + a -tLgcf6f a_ /

4a = a + a + a + a -rf/cf6f a_

To;}n] 3a + 4a = a + a + a + a + a + a + a = 7a -;ftcf6f a_

pbfx/0f 2

3a + 3b sf]hf8

oxf"; 3a = a + a + a -tLgcf6f a_ /

3b = b + b + b -tLgcf6f b_

To;}n] 3a + 3b = a + a + a + b + b + b

= (3 x a) + (3 x b)

= 3a + 3b

o;/L, 3a / 4a ;hftLo kbx¿ ePsfn]hf8\g ;lsof]t/ 3a / 3b ljhftLo kbx¿ ePsfn]hf8\g ;lsPg / hf8 ljljof b]lvfpg dfq ;lsof].

;hftLo kbx¿nfO{5f6f]u/] klg hf8g ;lsG5, tnsf]pbfx/0f x]l/ M

pbfx/0f 3

4x + 7x = (4 + 7) x = 11x

4x / 7x df 4 / 7 u0ffasx¿ xg\.

hf8 ubf{ 4 + 7 = 11 xG5 .

x hft hgfpg];asf] xf].

cEof;

1. tn lbOPsf ;hftLo kbx¿sf]ofqukmn lgsfn M

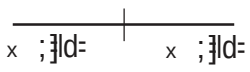
-s_ a + 3a -v_ 3a + 4a -u_ 2b + 3b -3_ 3c + 7c

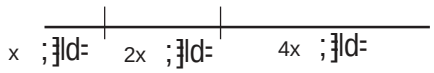
-a_ 4d + 5d -r_ 9t + 3t -5_ 11x + 12x -h_ 15y + 12y

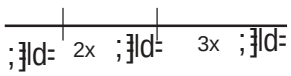
-´_ 9z + 9z -`_ 5a + 3b + a + 3b

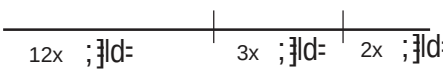
-6_ 3x + 4y + 3x + 7y -7_ a + a + a + 2a + 3b

2. lrqdf lbOPsf k]o]s /lvfv08sf]hDdf nDafO lgsfn M

-s_ 

-v_ 

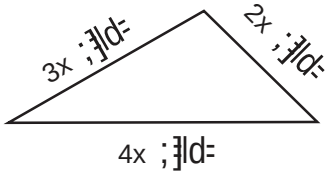
-u_ 

-3_ 

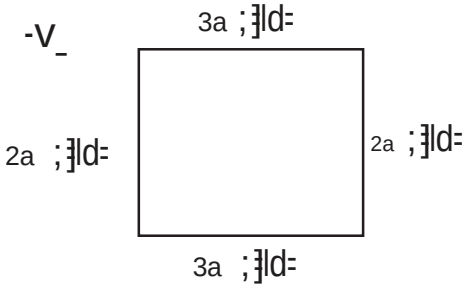
3. olb x = 2 5 eg]kZg g=+2 sf]k]o]s /lvfv08sf]jf:tljs nDafO lgsfn .

4. lrqdf lbOPsf k]o]s HofldtLo cfsf/x¿sf] jl/kl/sf] 3]/fsf] hDdf gfk slt xf]nf <

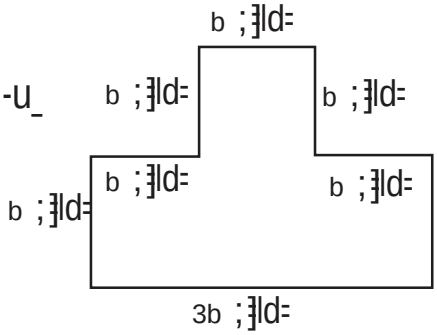
-s_



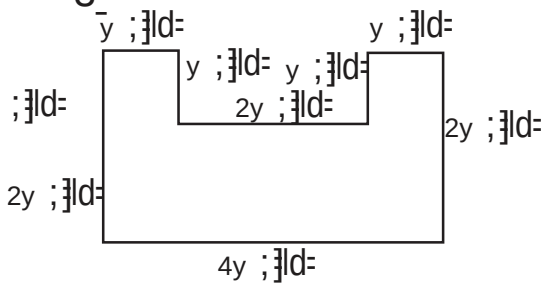
-v_



-u_



-3_



;hftLo kbx¿sf]36fp

x]/, 5nkmn u/ / l;s M

3a 3a – a 2a

3a - a = a + a + a - a

tLgcf6f a af6 Pp6f a leMSgkg]{nf0{- a df n]vPsf]

= a + a + a - a

= 2a

ljk/Lt lrÅg ePsf Pp6}kl/df0fsf ;hftLo kbx¿ x6f0PsF]

pbfx/0f 1

3a - 2a = a + a + a - a - a = a

pbfx/0f 2

3a - 3a = a + a + a - a - a - a = 0

pbfx/0f 3

3a - 2b = a + a + a - b - b = (3 x a) - (2 x b) = 3a - 2b

;hftLo kbx¿ 36fp ;lsG5 t/ ljhftLo kbx¿ 36fpg ;lsb}g .

pbfx/0f 4

12a - 7a

of]36fpnf0{5f6f] u/L 36fpg ;S5f}< Psk5g ljrf/ u/ t .

;hftLo kbx¿sf]hf3df h:t}36fpbf klg u0ffas dfq 36fpg]/ kbx¿df ePsf] ;as] clf/ jf hft hgfpg]rn/flznf0{ Ps 7fpdf dfq nv]k5 .

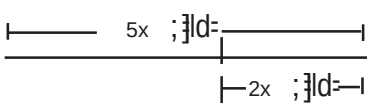
To;}h] 12a - 7a = (12-7)a = 5a pQ/ .

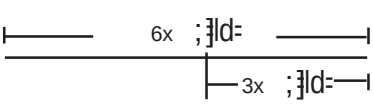
cEof;

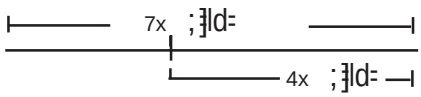
1. ;hftLo kbx¿sf]36fp u/ M

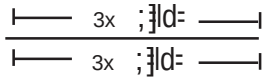
-s_ 6a - 4a	-v_ 3a - 2a	-u_ 4b - 3b	-3_ 5e - 2e
-a_ 17p - 13p	-r_ 15x - 3x	-5_ 7x - 7x	-h_ 12y - 9y
-´_ -b + 9b	-`_ 12x - 3x - 2x	-6_ 14y - 4y - y	

2. lrqdf k]o} /v]vfv08sf]k'/f nDafO / o;sf]s}L cz+sf]gfk lb0Psf]5 . /v]vfv08sf]afSL gfk lgsfn M

-s_ 

-v_ 

-u_ 

-3_ 

2. k|Zg g=+2 df x = 3 eP k]o}s /]vfv08sf]k"/f nDafO / af"sL cz+sf]nDafO klg lgsfn .

9.4 aLhLo ;dLs/0f **(Algebraic Equation)**

ul0ftLo jfSox¿

5 df 2 hf8bf 7 x©5 .

of]Pp6f ul0ftLo jfSo xf]. o;nfO{;a\ofTds ¿kdf n]Vbf 5 + 2 = 7 n]lv©5 . To:t} 15 / 9 sf]k|m/s 6 x©5 . o;nfO{;a\ofTds ¿kdf n]Vbf 15 - 9 = 6 n]lv©5 .

tnsf]sx¿L ul0ftLo jfSox¿nfO{x]/ |m

-s_ 5 lahf]/ ;a\of xf].

-v_ 5 n]12 nfO{lg|mzf]if efu nfU5 .

-u_ ufO{sf □ v6\6fx¿ x©5g\.

oL jfSox¿ ;f"rf] ´6f]jf vhf s]xg\< Ps}5g ljrf/ u/ t .

klxnf]jfSo ;f"rf]xf]. bf];f]jfSo ´6f]xf]. t];f]jfSo :ki6 5}g lsgeg] □ sf]7fpd"f 1, 2 / 3 kfn}+u /fVbf jfSo ´6f]x©5 / □ sf]7fpd"f 4 /fVbf jfSo ;f"rf]x©5 .

o;/L ;f"rf]/ ´6f]olsg ug{g;lsg]jfSonfO{ul0ftLo vhf jfSo elg©5 .

ca, Ps}5g ltdLx¿ klg ;u}a;}sf];fyL;u kfn}kfnf]ul0ftLo jfSo e©g nufpg] / ;fyLn]eg}s] jfSo ';f"rf], ´6f] jf 'vhf' s:tf]xf] 56\bfpg]sf];; u/ .

cEof;

tn lbOPsf k]o]s ul0ftLo jfSo ;fy]f ´6f]jf vhf s:tf jfSo xg\ 7DofP/ n]v M

1. 12 / 15 sf]hf3kmn 27 x'G5 .
2. 3 / 5 sf]alrsf];a\of 5 xf].
3. 15 af6 12 36fpb'f 13 af“sL /xG5 .
4. 31 lahf]/ ;a\of xf].
5. lqehdf □ cf6f ehfx¿ xG5g\.
6. □,12 sf]cfwf 5 .
7. Ps ld6/df □ ;]G6ld6/ x'G5 .
8. 12 n]121 nfO{lgMz]if efu hfG5 .
9. □ x □ = 9
10. □ n]6 eGbf 7hf];a\of hgfp5 .
11. tnsf k]o]s vhf jfSonfO{;fy]f agfpg sf]7fdf sgsg ;a\of n]vg'knf{<

    -s_ □, 5 eGbf 7hf]/ 7 eGbf ;fgf];a\of xf].

    -v_ 1, 2, 3, 4, 5 dWo]ju{;a\of □ xf].

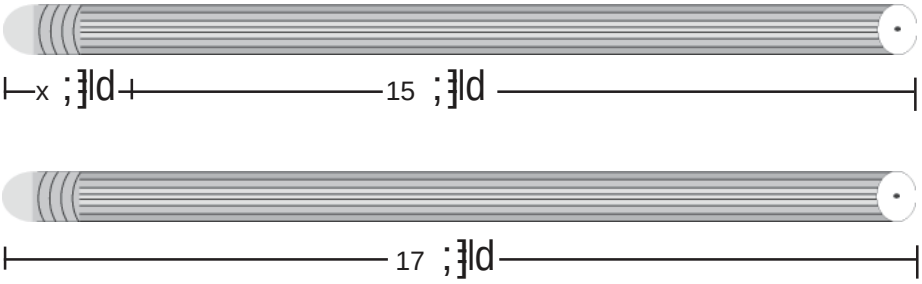
    -u_ □, 8 af6 5 36fpb'f cfpg];a\of xf].

    -3_ □, ;a\of 5 eGbf ;fgf]wgf7ds ;a\of xf].

    -a_ □, n]12 nfO{lgMz]if efu hfG5 .

;dLs/0fsf]xn

/fh'/ zLnfn]a/fa/ nDaf0sf Ps–Pscf6f l;;fsnd lsg]. /fhh]eg] 'zLnf, d7f]l;;fsndsf]nDaf0 t (x + 15) ;}ld= /x5, ltdf]slt 5 lg <'



zLnfn]elgg\ æbf0 t slt af7f]. vhf jfSo eg]kl5 ;f'rf]klg xg;S5, ´6f] klg . d t gfk7 dfq d7f l;;fsndsf]nDaf0 eG5'.Æ zLnfn]gfk7 x]/g\. pgsf] l;;fsnd 17 ;}ld= nfdf]/x5 . pgn]elgg\ æTo;f]eP ltdf]/ d7f]l;;fsnd a/fa/ ePsfn]x + 15 = 17 ePg t < of]t csf{vhf jfSo eof]. cl3Nnf]kf7sf]vhf jfSoeGbf of]t k|m/s lsl;dsf]5 lg . xf] of]vhf jfSodf a/fa/ lrÅg klg 5 . ca Psl5g ljrf/ u/f}t .Æ

/fhh]eg] æ vhf jfSonf0{;f'rf]jfSo agfpg t ;lsG5 lg . x + 15 =17 egsf]x df 15 hf8bf 17 xG5 eg]sf]xf]. sltdf 15 hf8bf 17 xG5 <

'2 df', zLnfn]l566}pQ/ lb0g\.

æTo;f]eP vhf jfSo x + 15 = 17 df x = 2 /fVbf of];f'rf]jfSo eof] xg t < clg d7f]l;;fsndsf]nDaf0 slt lg <Æ, /fhh];fv].

'2 + 15 = 17', zLnfn]elgg\.

o;/L s'/}s'/fdf /fh'/ zLnfn]t gof"ul0ftLo tl/sf kf]kQf nufP . pgLx¿n] eg]–

a/fa/ lrÅg ePsf]vhf jfSo h:t}M x + 5 = 15, 3 □ = 12, x - 9 = 1 cflbnf0{ ;dLs/0f (Equation) elgG5 . Tof]vhf jfSonf0{;f'rf]agfpg rnsf]dfg lgsfNg] tl/sfnf0{;dLs/0fsf]xn elgG5 .

;dLs/0f xg]3 cf6f vhf ul0ftLo jfSox¿ n]vL lzIfsnf0{b]vfpm .

pbfx/0f 1

vfnL sf7fdf slt /fVgk5{<

15 + □ = 19

oxf;" 15 + □ = 19 eg}sf]15 df slt hf8]19 xG5 eGg]xf].

15 df 4 hf8]19 xG5 . To;}n]vfnL sf7fdf 4 n]Vgk5{.

pbfx/0f 2

9 – □ = 6

oxf;" 9 – □ = 6 eg}sf]9 af6 slt 36fpb}f 6 xG5 eGg]xf].

9 af6 Ps–Ps u/L 36fpb}hfb}f 3 36fPkl5 6 xG5 . To;sf/0f vfnL sf7fdf 3 /fVgk5{. o;nfO{csf{tl/sfn]klg ljrf/ ug{;lsG5 M 6 df 3 yKbf 9 xG5 . To;sf/0f 9 af6 3 36fpb}f 6 xG5 . To;}n]vfnL sf7fdf 3 /fVgk5{.

pbfx/0f 3

5 + x = 8 df **x** sf]dfg slt xG5 <

5 + x = 8 eg}sf]5 df slt hf8]8 xG5 eg}sf]xf]. 5 df 3 hf8]bf 8 xG5 .

To;sf/0f x sf]7fpd"f 3 /fVbf 5 + 3 = 8 xG5 .

x sf]7fpd"f /flvPsf]3 nfO{x sf]dfg elgG5 .

pbfx/0f 4

xn u/ M

3 X y = 15

oxf;" 3 X y = 15 eg}sf]3 nfO{sltn]u0fg ubf{15 xG5 eg}sf]xf]. ca dgdg}3 sf]kxf8f eGb}hfcf}.

3 X 1 = 3 ldn]g 3 x 2 = 6 ldn]g

3 x 3 = 9 ldn]g 3 x 4 = 12 ldn]g

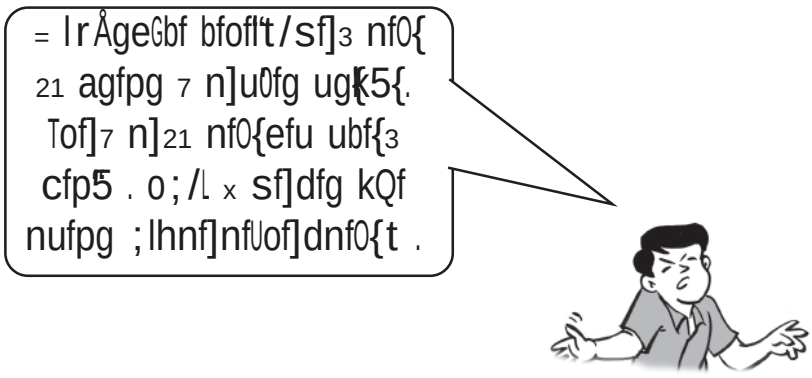
3 x 5 = 15 ldNof].

o;/L, 3 nfO{5 n]uGbf 15 xG5 . To;sf/0f y = 5 pQ/ .

pbfx/0f 5

$\frac{21}{X}$ = 3 df x sf]dfg slt xG5 <

oxf“ eg]sf]21 nf0{sltn]efu ubf{efukmn 3 cfp5 eg]sf]xf]. s;/L kQf nufpg]<



7Ls xf]

$\frac{21}{X}$ = 3

df sltn]21 nf0{efu ubf{3 cfp5 eGg]xf]. 3 nf0{7 n]uGbf 21 cfp5 . Tof] 7 n]21 nf0{efu ubf{3 cfp5 . To;sf/0f x sf]dfg = 7 xG5 .

cEof;

1. vfnL sf7fdf ldNg];a\of e/ M

-s_ 4 + □ = 9 -v_ 12 - □ = 8 -u_ □ + 7 = 10

-3_ □ - 5 = 15 -a_ 3 x □ = 15 -r_ 7x □ = 21

-5_ □ x 6 = 48 -h_ □ -´_ $\frac{125}{\square}$ = 25

-`_ $\frac{4\times15}{\square}$ = 5

2. xn u/ M

-s_ x + 7 = 12 -v_ x - 6 = 15 -u_ 16 + x = 20 -3_ 8 - y = 7

-a_ 15 = x + 5 -r_ 3x = 27 -5_ 4y = 36 -h_ 9z + 6 = 60

-´_ $\frac{36}{X} = 12$ -`_

3. olb x - 10 = 16 eP x = ?

4. olb 5y + 3 = 23 eP y = ?

5. olb $\frac{6z}{4} = 12$ eP z = ?

6. olb 25 - y = 18 eP y = ?

7. tnsf k]o}s hf8f /]vfv08x¿ a/fa/ nDaf0sf eP **x** / **y** sf]dfg lgsfn M

-s_ $\frac{(3x+1)\ ;}{13\ ;}$ -v_ $\frac{(2y+2)\ ;}{20\ ;}$ $\frac{125}{y} = 25$

-u_ $\frac{(2x+2)\ ;}{(x+5)\ ;}$