

frfbfgfŒfg,đŽw'è,µ,Ü,·B%Šú'l,í256kbps ,Å,·B

,Qf`fff“f|f<,¡MPPEGf|□[fffBf|,ÅfGf“fR□[fh,·,é,Æ,«,¡f,□[fh,ðŽw'è,μ,Ü,·□B'Ê□í,¡fWf‡fCf“fgfXfefŒf|,ð'lð,μ,Ü,·□  
B

□o—í,·,éf|□[fffBf|fXfgfŠ□[f€,ÉCRC,ð“ü,ê½,¢,Æ,«□C,±,±,ð‘l'ð,µ,Ä,,¾,³,¢□B

f f C f R [f h, É f } f b f s f “ f O, ·, é, Æ, «, } Š i ¢  
Æ, È, é f f C f R [f h, É 01:00:00:00 , ð Ž w' è, µ, Ü, · B—á, ¡, î C f Š f f @ f C f “ f X f t f C E [f h, É 0  
, ð Ž w' è, µ C f ^ f C f € f R [f h, É 01:00:00:00 , ð Ž w' è, µ, ÿ ê f C æ “ a, } f f C f € f R [f h, É 01:00:00:00  
, É, È, è, Ü, · B

fŠftf@fŒf“fXftfŒ□[f€,É‘‰ž,·,éf^fCf€fR□[fh,đŽw'è,μ,Ü,·□B,±,±  
,ÅZw'è,μ,½f^fCf€fR□[fh,ífGf“fR□[fhžž,Ežg—p,³,é,Ü,·□Bf^fCf€fR□[fh,É,í00:00:00:00 ˇÈŠO,đŽw'è,μ,Ä,,¾,³,¢□B

fŠftf@fŒf“fXftfŒ□[f€,É‘‰ž,·,éf^fCf€fR□[fh,đŽw'è,μ,Ü,·□B,±,±  
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fŠftf@fŒf“fXftfŒ□[f€,É‘‰ž,·,éf^fCf€fR□[fh,đŽw'è,μ,Ü,·□B,±,±  
,ÅZw'è,μ,½f^fCf€fR□[fh,ífGf“fR□[fhžž,Ežg—p,³,é,Ü,·□Bf^fCf€fR□[fh,É,í00:00:00:00 ˇÈŠO,đŽw'è,μ,Ä,,¾,³,¢□B

fŠftf@fŒf“fXftfŒ□[f€,É‘‰ž,·,éf^fCf€fR□[fh,đŽw'è,μ,Ü,·□B,±,±  
,ÅZw'è,μ,½f^fCf€fR□[fh,ífGf“fR□[fhžž,Ežg—p,³,é,ü,·□B

□o—í,·,éMPEG ftf@fCf<,Éf^fCf€fR□[fh,ð•t,\_,é,Æ,«,É□Cfhf□fbfvftfŒ□[f€□iDF□j,ðŽg—  
p,·,é,©fmf“fhf□fbfvftfŒ□[f€□iNDF□j,ðŽg—p,·,é,©,íŽw'è,ð,μ,Ü,·□B,±,íŽw'è,ftfŒ□[f€fŒ□[fg,^29.97 fps  
,í,Æ,«,í,Ý—LŒø,Å,·□B,»ê`ÈŠO,í,Æ,«,í□C,±,±,íŽw'è,É,©,í,ç,,NDF ,Æ,È,è,Ü,·□B

ftfŒ□[f€fŒ□[fg,ð24 fps ,Æ,μ,ÄftfŒ□[f€"Ô□†,Æf^fCf€fR□[fh,lf}fbfsf“fO,ðŒvŽZ,μ,Ü,·□B

ftfŒ□[f€fŒ□[fg,ð25 fps ,Æ,μ,ÄftfŒ□[f€"Ô□†,Æf^fCf€fR□[fh,lf}fbfsf“fO,ðŒvŽZ,μ,Ü,·□B

ffmpeg -i input.mp4 -vf "vflip" -r 29.97 -c:v libx264 -crf 23 -c:a aac -b:a 128k output.mp4

□o—í,·,éMPEG Video fGfŒf□f“f^fŠ□EfXfgfŠ□[f€,à,µ,,íMPEG fVfXfef€□ifvf□fOf‰f€□j□EfXfgfŠ□[f€  
,íftf@fCf<‐¼,ð“ü—í,µ,Ü,·□B‰E¤,È, ,éf{f^f“,ð‰Y,·,Æ□C“ü—  
íftf@fCf<,ðŽw'è,·,é,½,ß,ífRf,f“f\_fCfAf□fO,¤•ž|,³,ê,é,ì,Å□C,»±,©,çžw'è,·,é,±,Æ,à,Å,«,Ü,·□B

□o—í,·,éMPEG Video fGfŒf□f“f^fŠ□EfXfgfŠ□[f€,à,µ,,íMPEG fVfXfef€□ifvf□fOf‰f€□j□EfXfgfŠ□[f€  
,íftf@fCf<‐¼,ðŽw'è,·,é,½,ß,lfRf,f“f\_fCfAf□fO,ð•ž|,µ,Ü,·□B

□o—í,·,éMPEG Video fGfŒf□f“f^fŠ□EfXfgfŠ□[f€,à,µ,,íMPEG fVfXfef€□ifvf□fOf%of€□j□EfXfgfŠ□[f€,íftf@fCf<½i,»í,Q□j,ð“ü—í,µ,Ü,·□B,±,±,Äzw'è,µ,½ftf@fCf,íf}f<f'fpfXVBR  
□‰Ä•ífrfbfgfŒ□[fg□j,ÄfGf“fR□[fh,·,é,Æ,«,]2,4,6,8 fpfX,B,íftf@fCf<½,Æ,µ,Äžg—p,³,ê,Ü,·□B

□o—í,·,éMPEG Video fGfŒf□f“f^fŠ□EfXfgfŠ□[f€,à,µ,,íMPEG fVfXfef€□ifvf□fOf‰f€□j□EfXfgfŠ□[f€  
,íftf@fCf<—¼□i,»,í,Q□j,ðŽw'è,·,é,½,ß,ÍfRf,f“f\_fCfAf□fO,ð•\Ž!,µ,Ü,·□B

f r f f f | □ ï • ñ f t f @ f C f <, ð □ o — ï, ·, é, Æ, «, É □ C, ±, ±, ð'! ð, µ, Ü, · □ B f r f f f | □ ï • ñ f t f @ f C f <, í f } f < f ` f p f X V B R , ð □ i □ ¬, ·, é, Æ, «, É Ž g —  
p, ³, ê, é, à, ï, Å, · □ B

f r f f f | □ ï • ñ f t f @ f C f < , l f t f @ f C f < - ¼ , ð “ ü — l , μ , Ü , · □ B f } f < f ` f p f X V B R , Å f G f “ f R □ [ f h , · , é , Å E , « , l □ C , ± , l f t f @ f C f < - ¼ , ð • K , , □ Y ' è , μ , Å , ¾ , ³ , ¢ □ B

□o—í,·éfrffff|□í•ñftf@fCf<,íftf@fCf<‐¼,ðŽw'è,·,é,½,ß,ífRf,f“f\_fCfAf□fO,ð•íŽ!,µ,Ü,·□B

□o—í,·éfI□[fffBfIftf@fCf<,]ftf@fCf←¼,δ“ü—í,μ,Ü,·□B‰E‘¤,É, ,é{f{f^f“,δ‰Y,·,Æ□C“ü—íftf@fCf<,ðZw'è,·,é½,ß,lfRf,f" f\_fCfAf□fO,¤•\Z|³,ê,é,ì,Å□C,»±,©,çZw'è,·,é,±,Æ,à,Å,«,Ü,·□B

□o—í,·éfI□[fffBfIftf@fCf<,]ftf@fCf←¼,ðŽw'è,·é,½,ß,]fRf,f“f\_fCfAf□fO,ð•\žl,μ,Ü,·□B

□o—í,·,éMPEG frfffflftf@fCf<,)ŠeŽífpf‰f□□[f^,đ□Ý'è,·,é,½,ß,]f\_fCfAf□fOf{fbfNfx,đ•ž|,μ,Ü,·□B

□o—í,·,éMPEG frffffftf@fCf<É,©,¬,éftfBf<f^,ð□Y'è,·,é,½,ß,lf\_fCfAf□fOf{fbfNfX,ð•\Z|,μ,Ü,·□B

fGf“fR□[fhf,□[fh,đŽw'è,μ,Ä,,¾,³,\$□B,½,¾,μVideo CD ,ÆSuper Video CD  
,ä'!ł,Å,«,é,ł,□CftfŒ□[f€fTfCfY,ÆftfŒ□[f€fŒ□[fg,ªVideo CD , ,é,f,íSuper Video CD ,łKŠi,Æê'v,μ,Ä,¢  
,é,Æ,«,¾,–,Å,·□B

CBR*i*Œ'èfrfbfgfŒŒ[fg]j,ÀfGf“fRŒ[fh,·,é,Æ,«,]frfbfgfŒŒ[fg,ðkbps 'P^È,Àžw'è,µ,Ü,·ŒB

f□f“fpfXVBR□i‰‰Å•ífrfbfgfŒ□[fg□j,ÅfGf“fR□[fh,·,é,Æ,«,)Qftf@fNf^,ðŽw'è,µ,Ü,·□B,±,l'l,ífGf“fR□[fhžž,]—  
ÊŽq‰‰»fXfP□[f<,É□i—p,µ,Ü,·□B'l,„ä,«,¢,U,Çftf@fCf<ftfCfY,I□¬,³,,È,é,Ü,·□B

f}f<f`fpfXVBR□i‰Ä•ífrfbfgfŒ□[fg□j,ÄfGf“fR□[fh,·,é,Æ,«,]•½ífrfbfgfŒ□[fg,ðkbps 'P^Ê,ÄŽw'è,µ,Ü,·□B

f□f“fpfXVBR□i‰‰Ã•ífrfbfgfŒ□[fg□j,ÃfGf“fR□[fh,·,é,Æ,«,í]□Ã□¬frfbfgfŒ□[fg,ðkbps 'P^Ê,ÃŽw'è,µ,Ü,·□B,±,í]□Ã□¬frfbfgfŒ□[fg,ð•Ü,Ã½,ß,Æ□C•”•a“l,E—ÃŽq‰‰»fXfP□[f<,‰‰º,º,ç,ê,é,±,Æ,ª, ,é,Ü,·□B

f}f<`fpfXVBR□i%oÅ•ifrfbfgfŒ□[fg□j,ÅfGf“fR□[fh,·,é,Æ,«,]□Å□¬frfbfgfŒ□[fg,ðkbps 'P^È,ÅŽw'è,μ,Ü,·,□B

f□f“fpfXVBR□i‰‰•ífrfbfgfŒ□[fg□j,ÃfGf“fR□[fh,·,é,Æ,«,í□Ã'åfrfbfgfŒ□[fg,ðkbps 'P^È,Ãžw'è,µ,Ü,·□B,±,í□Ã'åfrfbfgfŒ□[fg,ð•Ü,Ã,½,ß,É□C•”•a“l,É—Èžq‰»fxfP□[f<,a□ã,°,ç,ê,é,±,Æ, a, ,ê,Ü,·□B

f}f<`fpfXVBR□i‰Ä•ífrfbfgfŒ□[fg□j,ÄfGf“fR□[fh,·,é,Æ,«,]□Ä'åfrfbfgfŒ□[fg,ðkbps 'P^È,Äžw'è,μ,Ü,·□B

f}f<`fpfXVBR ,Å,ifGf“fR□[fhŽž,É□Cfrfff|□•ñftf@fCf<,ð□V<K,É□ì□¬,·,é,Æ,«,É'l'ð,μ,Ü,·□B□o—  
|ftf@fCf<,l,Æ,±,é,ÅŽw'è,μ,½frfff|□•ñftf@fCf<,a'¶□Y,μ,£,Æ,«,í•K,,±,±,ð'l'ð,μ,Å,,¾,³,\$□B

f}f<`fpfXVBR ,Å,ífGf“fR□[fhŽž,É□CŠù‘¶,ífrfff|□í•ñftf@fCf<,ðŽg—p,·,é,Æ,«,É'ł'ð,μ,Ü,·□B,±  
,ż,ç,ð'ł'ð,·,é,Æ□Cfrfff|□í•ñftf@fCf<□o—í—p,ífpfX,^□E—  
^,é,½,β□C'Z,¢ŽžŠÔ,ÅfGf“fR□[fh,Å,«,Ü,·□B,½,¾,μ'Ó%ñfrfff|□í•ñftf@fCf<,ð□ì□¬,μ,½,Æ,«,ÆfrfbfgfŒ□[fg,^  
å,«,^Ü,É,é,Æ,«,å□Cf`fffvf^□Y'è,ð•í!,½,Æ,«,È,ç,í□Cfrfff|□í•ñftf@fCf<,ð□ì,è¼,μ,Å,,¾,³,¢□B

f}f< f`fpfXVBR  
□í‰Å•ífrfbfgfŒ□[fg□j,ÅfGf“fR□[fh,·,é,Æ,«,]fpfX,í‰øñ□”,ðŽw'è,µ,Ü,·□BfrfffI□í•ñftf@fCf<,ð□V<K,É□i□¬,·,é□ê  
□‡,í□C,±,±,ÅZw'è,µ,½fpfX,í‰øñ□”,æ,è,P‰øñ'½,¢fpfX,ÅfGf“fR□[fh,³,é,Ü,·□B

f} f`fpfXVBR□i%Å•ifrbfgfŒ□[fg□j,ÅfGf“fR□[fh,·,é,Æ,«,É•”•a”!,ÉfrfbfgfŒ□[fg,ð•]!,½,è,·,é,½,β,if\_fCfAf□fOf{fbfNfx,ð\ž|,μ,Ü,·□B,½,¾,μ□C,±,lf\_fCfAf□fOf{fbfNfx,ð•]!,·,é,½,β,É,ífrfffI□î•ñftf@fCf<^K—v,É,È,é,i,Å□C,,ç,©,¶,ßfrfffI□î•ñftf@fCf<δ□i□¬,μ,Ä,“,¢,Ä,,¾,³,¢□BfrfftI□î•ñftf@fCf<ÍCBR,·,é,¢,if□f“fpfXVBR,ðŽw’è,μ,½,Æ,«,Å,à□i□¬,Å,«,Ü,·□B□iŽA□Ü,É,ífrfffI□î•ñftf@fCf<^¶□Y,μ,È,¢,Æ,«,Éf}f<`fpfXVBR,ÅfGf“fR□[fh,μ,æ,¤,Æ,·,é,Æ□CfrfffI□î•ñftf@fCf<δ□i□¬,·,é,½,β,É□C,Ü,Žn,β,ÉCBR,ÅfGf“fR□[fh,³,ê,Ü,·□B□j

<3:2 *f*∨*f*¬*f Ef*“δ□s,¤,Æ,«,É□C,±,δ'!δ,μ,Ü,·□B*f*\□[*fX*,<sup>a</sup>NTSC ,i,Æ,«,i,Y—LŒø,Å,·□B

3:2  $f \vee f \lhd f \_f \rightarrow f^{\prime} \tilde{f} X f g, \delta \square \check{Y} \grave{e}, \cdot, \acute{e}, \frac{1}{2}, \beta, \grave{i} f \_f C f A f \square f O f \{ f b f N f X, \delta \bullet \check{Z} \grave{i}, \mu, \check{U}, \cdot \square B$

< t3:2 f\vf< f\_fEf“, ð\s, \f[fXftf@fCf<, ^fŒf^ [f{fbfNfX, \ê\±, \±, \d'l'\ð, \µ, \Ü, \B, \±, \±, \d'l'\ð, \·, \é, \Æf\vf< f\_fEf“ŒY\o, \Zg—p, \é—\æ, \fŒf^ [f{fbfNfX, \í\í\à, \¾, \¬, \É, \È, \é, \Ü, \B

DVD ◻ì ◻¬, ◻, ◻Æ, ◻«, ◻Éf pf “f X f L f f f “ ◻Ef, ◻[fh, ◻, ◻µ, ◻½, ◻¢ ◻ê ◻‡, ◻±, ◻±, ◻ð' l' ð, ◻µ, ◻Ü, ◻· ◻B

fAfXfyfNfg",öŽw',µ,Ü,·,B—á,!720x480,]f€][fr][ö4:3,ÄfGf“fR[fh,·,é,ÆCžáš±c’·,ÄÄ¶¶,³,ê,Ü,·,B,±,ê,]720:480 (3:2),ö4:3,ÄÄ¶¶,é,©,ç,Ä,·,BSAR (Sample Aspect Ratio =fsfNfZf,]fAfXfyfNfg")1:1,ÄfGf“fR[fh,·,é,]Û,½,ê,Ü,·,CDVD,]fì¬,·,é,ê,‡,í4:3,Ü,½,í16:9,öI,ñ,Ä,,¾,³,¢,B

,±,Íf \_fCf Af ñ fOf{fbfNfx,À ñ Ý'ë,µ,½fpf‰f ñ ñ [f^,À,·,®,ÉfGf“fR ñ [fh,ðŠJžn,µ,½,¢ ñ ê ñ †,É,±,Íf{f^f“,ð‰Ý,µ,Ä,-  
,¾,³,¢ ñ B

fo□[fWf‡f“□î•ñ,ð•\Z|,·,éf\_fCfAf□fOf{fbfNfx,ðŠJ,«,Ü,·□B

,±,Íf\_ÍfCfÁfÍfOfÍfÍfbfNfX,ð•Â,¶ÍfC•ÍfX“à—e,ð•Û'¶,µ,Ü,·ÍfB

•ï□X“à—e,ð•Ü'¶,¹,,É□C,±,)f\_fCfAf□fOf{fbfNfx,ð•Â,¶,Ü,·□B

fGf“fR□[fh, .éfXfgfŠ□[f€,] GOP □\¢,ð•ž!,µ,Ü,·□B,±,]□\¢,í M ,â N ,íI,É,æ,Á,Ä•í‰»,µ,Ü,·□BP fsfNf`ff,â B  
fsfNf`ff, a½,¢,Ü,Ç□C~3□kCEø—,í„,É,è,Ü,· a□C“a□o,µ,a,Å,«,é,] I fsfNf`ff,I,Ý,É,] Å□Cl fsfNf`ff,a□,É,¢  
,ÆfV□[fN,í•Ö,É,È,è,Ü,·□B,»,]½,ßfV□[f“ a□Ø,è'Ö,í,Å,½□ê—É,í□CŽ©“®“I,É I fsfNf`ff,a“ü,³,ê,é,æ,a,É,È,Á,Ä,¢  
,Ü,·□B•W□€“I,È□Y'è,í□C/IBBPBBPBBPBBPBB/ ,Å,·□B

(~A'±,μ,Ä□oŒ»,·,éB fsfNf`ff,]□"+1),ðŽw'è,μ,Ü,·□BŽw'è,Å,«,é"ÍÍ1 ,©,ç3 ,Ü,Å,Å,·□BB fsfNf`ff,Æ,í□C bidirectionally predictive-coded picture ,í`å,Å,·□B,±,í`fsfNf`ff,í%oß<Ž,Æ-¢—^,íI ,Ü,½,íP fsfNf`ff,ð—p,¢ ,Ä“®,«•â□ž,ð,·,é,î,Å□C^3□kŒø—!,^□Å,à□,,È,è,Ü,·□B

(—×ÙÚ,·,éI fsfNf`ff,¡ŠÔ,ÉŒ»,ê,éP fsfNf`ff,¡□"+1),δŽw'è,µ,Ü,·□BŽw'è,Å,«,é"Íí,í1 ,©,ç5 ,Ü,Å,Å,·□BP  
fsfNf`ff,Æ,ípredictive-coded picture ,Íà,Å,·□B,±,ÍfsfNf`ff,!‰øß,Í ,Ü,½,íP fsfNf`ff,ð—p,¢  
,Ä“®,«•âÙž,ð,µ,Ü,·□B^3□kŒø—!,ÍB fsfNf`ff,É"å,x,ÄžáŠ±—ò,è,Ü,·,ä□CI fsfNf`ff,æ,é,í.,Å,Æ□,Œø—!,Å,·□B

GOP fwfbf\_đ‰ø½ftfŒŒ[f€,²,Æ,É]“ü,·,é,©,]Žw'è,đ,µ,Ü,·,ŒB'ÊŒí,Íl fsfNf`ff,^Œ»,ê,é,Æ,±,ë,GOP  
fwfbf\_,đ'}“ü,µ,Ü,·,^ŒC'}“ü•p"x,đŒ,È,,·,é,±,Æ,à,,Ü,·ŒB

fV□[fPf“fXfwfbf\_-,ð‰½ftfŒ□[f€,²,Æ,É'}“ü,·,é,©,]Žw'è,ð,μ,Ü,·□B'È□í,ÍGOP  
,²,Æ,Æfwfbf\_-,ð'}“ü,μ,Ü,·,^□C'}“ü•p“x,ð□,È,,·,é,±,Æ,à,Å,«,Ü,·□B

fXfgfŠ□[f€,i]□ÅŒä,ÉfV□[fPf“fXfGf“fhfR□[fh,đ•t‰Å,μ,Ü,·□B“Å•È,È—□—  
R,ª,È,¢ŒÅ,è□CfV□[fPf“fXfGf“fhfR□[fh,í•t‰Å,·,é,æ,¤,È,μ,Å,,¾,³,\$□B

DVD ,íKŠi,É‡‡,¤,æ,¤  
,ÉftfŒ [f€fTfCfY,ð•í X,µ,Ü,· BftfŒ [fg, 25fps,í,Æ,«,í720x576,É C29.97fps,í,Æ,«,í720x480,É,é,æ,¤  
,É}fbfefBf“fO,µ,Ü,· B,»,{ È O,íftfŒ [fg,í ê ‡,í CfTfCfY,ð•í X,µ,Ü, ,  B

□ì□¬,μ,½MPEG-2 frfffI□EfXfgfŠ□[f€,ðf}f< f`fAf“fOf< DVD —p,ÉŽg—p,μ,½,¢□ê□‡,í,±,±,ð'l'ð,μ,Ä,,¾,³,¢□B

,±,±,ð'l'ð,·,é,Æ□C,·,x,Ã,)GOP ,ðfNf□□[fYfh,É,μ,Ü,·□B,±,±,ð'l'ð,μ,È,,Ã,àfV□[f“,]•í,í,è—Ú,)GOP  
,íZ©“®“I,ÉfNf□□[fYfh,É,È,é,ì,Ã□C'È□í,í,±,±,ð'l'ð,·,é•K—v,í, ,é,Ü,¹,ñ□B'l'ð,μ,½□ê□‡□C‰æž,ž, „žáš±—ò‰»»,μ,Ü,·□B

GOP,¡fTfCfY,ðŒÅ'è,É,µ½,¢□ê□‡,É□C,±,±,ð'l'ð,µ,Ä,,¾,³,¢□B,½,¾,µ,»,¡□ê□‡□CfV□[f“f`fFf“fW,¡ŒÝ□o,a–  
³Œø,É,È,é,¡,Å□C‰æž,ž,áS±—ž,ž,Ü,·□B

CBR ,Å,ífGf“fR□[fhŽž□CGOP ,ífrfbfg'·,ðŠ®'S,É^é'è,É•Û,¿,Ü,·□B'Ê□í,í,±,±,ð'l'ð,μ,È,¢,Å,-  
¾,³,¢□B'l'ð,·é,Æ‰æŽ¿,ºŽáŠ±—Z,¿,Ü,·□B



□...•½‰δ'œ“x,δ"¹/₄•ª,É,µ,ÄfGf“fR□[fh,µ,Ü,·□B,½,¾,µ□...  
•½‰δ'œ“x,í16,í”{□”,ÉSÜ,ß,ç,ê,é,í,Ä□CŒ³,ífTfCfY,ª720,í□ê□‡,í□C360,å,í,È,□C352,É,È,è,Ü,·□B

□,'½‰đ'œ"x,đ"½•a,É,µ,ÄfGf“fR□[fh,µ,Ü,·□B□...•½‰đ'œ"x,đ"½•a,É,·,é□C,Æ,Æ,à,Éžg—  
p,·,é,Æ□C720x480,íftfce□[f€,đ352x240,ífTfcfY,ÄfGf“fR□[fh,À,«,Ü,·□B

<P“x,ÿfŒfxf<,ð16,©,ç235,É□§ŒÀ,µ,Ü,·□B,±,ê,íITU-R BT.601-5,ÿK-ñ,É□],Á,Ä,¢,Ü,·□B'Ê□í,í,±,¿,ç,ð'Íð,µ,Ä,,¾,³,¢□B

<P“x,íƒŒfxf<,ð0,©,ç255,É,È,é,æ,¤,É,µ,Ü,·,□B16,©,ç235,É,È,é,æ,¤,É,µ,½,Æ,«,É–â'è,ª, ,é,È,é,¤,í,±,ç,ð'íð,µ,Ä,,¾,³,¢,□B

—ÊŽq‰»□s—ñ,ð□Ý'è,·,é,½,ß,}f\_fCfAf□fOf{fbfNfX,ð•ž!,µ,Ü,·□B

fVfXfef€fXfgfŠ□[f€  
,ífpfPfbfgfTfCfY,ðŽw'è,μ,Ü,·□BŽw'è,Å,«,é"ÍÍ,í128□`2,048fofCfg,Å,·□B'l,í128,ì"{}□",É,È,é,æ,¤,É□Ý'è,μ,Ä,,¾,³,¢□B

f t f B f < f ^ □ Y ' è , ] " o ~ ^ f Š f X f g , Å , · □ B , » , ê , ½ , ê , ] □ s , É • \ Z ! , ³ , ê , é f t f C E □ [ f € " Ô □ t □ C f ^ f C f € f R □ [ f h , í □ C f t f B f < f ^ □ Y ' è , ] Š J Ž n f | f C f " f g , ö • \ , µ , Ü , · □ B □ Y ' è , ³ , ê , ½ f t f B f < f ^ , í Z Y , ] Š J Ž n f | f C f " f g , a — , é , Ü , Å Ž g — p , ³ , ê , Ü , · □ B

ž©'R‰æ'œ,í‰f'œ,É“K,µ½ftfBf< f^□Y'è,É,µ,Ü,·□B

CG %œ'œ,È,Ç□C“Å,É,È,ç,©,È%œ,É“K,µ,%ftfBf<f^□Ý'è,É,µ,Ü,·□B

fXfLfff, ÄfXfLfff“<sup>3</sup>, ê,½fAfjf□□[fVf+f“‰æ'œ, È, Ç□CfRf“fgf‰fXfg, a‘å, «, È‰f'œ, È“K, µ, ½ftfBf< f^□Y'è, È, µ, Ü, . □B

$f \dagger \square [f U,^a \square Y' \dot{e}, \mu, \frac{1}{2} f \otimes f'' f V f \square [f g, \delta' l' \delta, \mu, \ddot{U}, \cdot] \square B$

%o{œ,ł“r”Ó“x,đ,T'iŠK,Å□Ý'è,μ,Ü,·□B

f†□[fU,a□Y'è,μ,½feff“fvfŒ□[fg,]fŠfXfg,ð•\Ž!,μ,Ü,·□B

*fef"fvfŒ□[fgfŠfXfg,ł't,ł'l'ð,³,ê,½€–Ú,ðíœ,μ,Ü,·□B*

f f B f < f ^ □ Y ' è , ð Š J Ž n , · , é f ^ f C f € f R □ [ f h , ð • \ Ž l , μ , Ü , · □ B

f f B f < f ^ □ Y ' è , ð Š J Ž n , · , é f ^ f C f € f R □ [ f h , ð • \ Ž l , μ , Ü , · □ B

f f B f < f ^ □ Y ' è , ð Š J Ž n , · , é f ^ f C f € f R □ [ f h , ð • \ Ž l , μ , Ü , · □ B

f f B f < f ^ □ Y ' è , ð Š J Ž n , · , é f ^ f C f € f R □ [ f h , ð • \ Ž l , μ , Ü , · □ B

f<sub>t</sub>f<sub>B</sub>f<f<sup>^</sup>□Y'è,đŠJŽn,·,éf<sup>^</sup>fCf€fR□[fh,đ□Y'è,μ,Ü,·□B

f<sub>t</sub>fBf<f^□Y'è,đŠJŽn,·,éftfŒ□[f€"Ô□†,đ'¼□Ú"ü—í,·,é,±,Æ,à,Å,«,Ü,·□B

f<sub>t</sub>f<sub>B</sub>f<f^Y'è,đŠJŽn,·,éftfŒE[f€"Ô†,đY'è,μ,Ü,·B

Œ»□Ý,íftfBf<f^□Ý'è,ðfŠfXfg,É“o~,μ,Ü,·□B

□...•½f□□[fpfxftfBf< f^,ð—LŒø,É,µ,Ü,·□B

□...•½f□□[fpfxftfBf< f^,]fJfbfgflftžü"g□",ð□Ý'è,μ,Ü,·□B

□...•½f□□[fpfXftfBf<f^,]□Y'è'l,Å,·□B,±,l'l,δ•Ø□W,·,é,±,Æ,É,æ,Å,Ä'¼□Ú•í□X,·,é,±  
,Æ,à,Å,«,Ü,·□BŽw'è,Å,«,é"í'í,í2,©,ç10,Ü,Å,Å,·□B

□...•½f□□[fpfxftfBf< f^,]fJfbfgflftžü"g□",ð□Ý'è,μ,Ü,·□B

□,'¼ftfBf< f^,ð—LŒø,É,µ,Ü,·□B

□,'¼ftfBf $\langle f^\wedge\rangle$ ,®,©,è«í□‡,ð□Ý'è,µ,Ü,·□B

□,'½ftfBf< f^)□Ý'è'I,Å,·□B,±,l'l,ð•Ò□W,·,é,±,Æ,É,æ,Å,Å'½□Ú•í□X,·,é,±,Æ,à,Å,«,Ü,·□BŽw'è,Å,«,é"ÍÍ,í1 ,©,ç64  
,Ü,Å,Å,·□B'f□P,^afCf" f^□[fŒ□[fX,ì□ê□‡,í16 'ö"x,Ü,Å,ð□Cfvf□fOfŒfbfVfu,ì□ê□‡,â<sup>t</sup>3:2 fvf< f\_fEf"□^—  
□,µ,½□ê□‡,í32 'ö"x,Ü,Å,ð—Ú^Å,É,©,\_,Å,,¾,³,¢□B

□,'¼ftfBf $\langle f^\wedge\rangle$ ,®,©,è«í□‡,ð□Ý'è,µ,Ü,·□B

—ÈŽq‰»,ð□s,¤'O,É□C‰fœ,ÉfmfCfY,ð•t‰Å,µ,Ü,·□B,±,iftfBf<f^,í“™□,□ü□ó,ifmfCfY,a—Ú—  
§,Å□é□‡,ÉŒø‰È,ð"Šö,µ,Ü,·□B

%ofœ,É•t‰Â,·,éfmfCfY,¡—Ê,ð□Ý'è,μ,Ü,·□B

%ofœ,É•t‰oÅ,éfmfCfY,)—Ê,Å,·□B,±,l'I,ð•Ó□W,·é,±,Æ,É,æ,Å,Ä'½□Ú•j□X,·é,±,Æ,à,Å,«,Ü,·□BŽw'è,Å,«,é"Íí,í1  
,©,ç128 ,Ü,Å,Å,·□B"™□,□ü,lmfCfY,a—Ú—§,½,E,¢,Æ,±,é,É,±,lmfCfY,ð"ü,ê,é,Æ‰œZ,„å,«,—  
ò‰»,,é,i,Å□C□Ý'è'l,í40 ^È‰º,É—},!Å,„,±,Æ,ð,„,·,β,μ,Ü,·□B

%ofœ,É•t‰Å,·,éfmfCfY,¡—Ê,ð□Ý'è,μ,Ü,·□B

—ÈŽq‰»»,·,é□Û,¡“Á□«,¡f of %o f“f X,đŽw'è,µ,Ü,·□B□¶,É□s,,Ù,Ç•¡ŽG,È•”•a,Éfrfbfg—È,đ'½,ß,ÉŠ,,è“-,Ä,Ü,·□B

—ÊŽq‰»,·,é□Û,í“Á□«f of % of f“fX,í'l,Â,·□B,±,í'l,ð•Ó□W,·,é,±,Æ,É,æ,Á,Ã'½□Ú•í□X,·,é,±  
,Æ,à,Â,«,Ü,·□BŽw'è,Â,«,é'l,í0,©,ç100,Ü,Â,Â,·□Bf,fXfL□[fgfmfCfY,a—Ú—  
§,Â,Æ,«,í'l,ð□¬,³,ß,É□C“™□,□ú□ó,]fmfCfY,a—Ú—§,Â,Æ,«,í'l,ðå,«,ß,É□Ý'è,μ,Ä,,¾,³,¢□B—Ú^À,í16 ,©,ç40  
,Â,·□BfrfbfgfŒ□[fg,a□,,¢□ê□‡,íå,«,ß,í'l,ð□Ý'è,μ,½•û,a,¢,¢,©,à,μ,ê,Ü,¹,ñ□B

—ÊŽq‰»,.·é□Û,¡“Á□«,¡f of‰f“fX,ðŽw'è,µ,Ü,·□B

fCf“fgf‰f}fNf□fuf□fbfN,¡DCŒW□”,¡□,“x,ð8-bit,Éžw'è,µ,Ü,·□B'áfrfbfgfŒ□[fg,¡,Æ,«,í8-bit,¡•û,‰œZ,‡,œü□ã,·é□ê□‡,‡, ,è,Ü,·□B

fCf“fgf‰f}fNf□fuf□fbfN,¡DCŒW□”,¡□,“x,ð9-bit,Éžw’è,μ,Ü,·□B

fCf“fgf‰f}fNf□fuf□fbfN,¡DCŒW□”,¡□,“x,ð10-bit,ÉŽw'è,μ,Ü,·□B,È¾,ç,©,È<P“x•í‰»», a, ,É•”•a,Å,¡□,“x,ð□,,-,μ,½•Ù,a,«,ê,¢,ÉŒ©,!Ü,·□BfrfbfgfŒ□[fg,a□,,¢□é□‡,¡10-bit,É□Y'è,μ,Å,,¾,³,¢□B

DCTŒW",ð□‡□~,˜,À,¬,é,Æ,«,ÉfWfOfUfOfXfLfff“,ð—p,¢,Ü,·□B,±,ê,íH.261,JPEG,MPEG-1“™,À—p,¢,ç,ê,À,¢,  
½fXfLfff“fpf^□[f“,À,·□Bfvf□fOfŒfbfVfu‰æ‘œ,ì□ê□‡,É,ífWfOfUfOfXfLfff“,ì,Ù,¤,¤,‰æZ,È,È,é□ê□‡,¤, ,  
è,Ü,·□B

DCTŒW",ð‡‡~,˜,À,¬,é,Æ,«,ÉfCf“f^Œ[fX‰æ'œ,É“K,µ½,â,è•û,ÅŒs,¢,Ü,·ŒB

<P“xfŒfxf<,lŒÅŒ¬'l,ðŒÝ'è,µ,Ü,·ŒB<P“xfŒfxf<,l”íŒí,ð16 ,©,ç235 ,ÉŒÝ'è,µ,Ä,·,¬ŒCŒufrfffŒÝ'èŒv,l,Æ,±,é,Ä<P“xfŒfxf<,ð0 ,©,ç255 ,ÉŒÝ'è,µ,½ŒêŒ‡,Ä,àŒCŒä‰º,ðfNfŠfbfsf“fO,µ,Ä16 ,©,ç235 ,l”íŒí,ÉŽü,ß,Ü,·ŒB

<P“xfŒfxf<,l□Ã:â'l,ð□Ý'è,μ,Ü,·□B<P“xfŒfxf<,l”íí,ð16 ,©,ç235 ,É□Ý'è,μ,Ä,·,¬,l□C□ufrfff|□Ý'è□v,l,Æ,±,é,Ä,<P“xfŒfxf<,ð0 ,©,ç255 ,É□Ý'è,μ,½□ê□‡,Ä,à□C□â‰º,ðfNfSfbfsf“fO,μ,Ä16 ,©,ç235 ,l”íí,Éžú,ß,Ü,·□B

f\□[fx%œ'œ,^afvf□fOfŒfbfVfu, ,é□ê□‡,É□C,±,±,δ'l'δ,μ,Ä,,¾,³,ƒ□B,±,±,l□Y'è,í“®,«ŒÝ□o□^—□,É%œe<ż,đ—  
^,!,é,½,ß□C□i□¬,³,ê,éfxfgfS□[f€,i%œæžż,É,à%œe<ż,μ,Ü,·□B

Œ»□Ý,íftfBf<f^□Ý'è,ðfeffvfgŒ□[fg,Æ,μ,Ä•Ü‘¶,μ½,¢,Æ,«,É,±,íf{f^f“,ð‰Ý,μ,Ü,·□B

Cinema Craft Encoder ,iWeb fy□[fW,ÉfAfNfZfX,μ,Ü,·□B

f`f`bf`gf`  
EZq%»`f`X`f`P`[f`<`f`Of`%`ft`>`Z`|,μ,Ü,·`B`i`f`r`f`b`f`g`f`  
EZq%»`f`X`f`P`[f`<`f`Of`%`ft`>`Ø,è`Ö,|,`C`f`Of`%`ft`>`E`  
,é`f`%`f`W`f`{`f`^`f`,"A`S,¢,Ü,·`B`j",¢`ü`C—  
|,`ü`C`Ö,¢`ü,|,»,,é,½,é`f`sf`N`f`ff`CP`sf`N`f`ff`|,δ`v,μ,Ü,·`B`%`C`F,¢`ü,|,»,,é,½,é`GOP  
"à`f`t`f`  
f`€,|,•½<`|,δ`Z`|,μ,Ä,¢,Ü,·`B`c,É',¢`Z`‡,|,ü,í`V`[f`"f`f`F`f`"f`W`f`|`f`C`f`"f`g,δ`Z`|,μ,Ä,¢,Ü,·`B

fOf%of t,if□¶'[,if^fCf€fR□[fh,δ•\Z\_i,μ,Ü,·□B

fOf%of t,if□¶'[,if^fCf€fR□[fh,δ•\Z'\_i,μ,Ü,·□B

fOf%of t,if□¶'[,if^fCf€fR□[fh,δ•\Z'\_i,μ,Ü,·□B

fOf%of t,if□¶'[,if^fCf€fR□[fh,δ•\Z'\_i,μ,Ü,·□B

fOf%of t,)%oE'[,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%of t,)%oE'[,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%of t,)%oE'[,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%of t,)%oE'[,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf‰ft,ð‰¶‰E,É‰Ú‰@,µ,Ü,·‰B

fOf%of t, l□ā'[l'l, δ•\Z|, μ, Ü, ·□B

fOf%of t, l%%o'[l'l, δ•\Z!, μ, Ü, ·□B

fOf%of t, l□ā'[l'l, δ□¬, ^3,, μ, Ü, ·□B

fOf%of t, l□ä'[l'l, ð'ä, «., μ, Ü, ·□B

fOf%of t, l%%o' [ , l'l, δ □¬, ^, „μ, Ü, · □ B

fOf%of t,l%%o'[l'l,ð'å,«,,μ,Ü,·□B

fOf%of t, öä•ûŒü, ÉfXfNf□□[f<μ, Ü, ·□B

fOf%of t, ð‰‰•ûŒü, ÉfXfNf□□[f<,µ,Ü,·□B

frfbfgfŒ□[fg,]fOf‰ft,đ•ѣ!,μ,Ü,·□B

—Èžq‰»fXfP□[f<,]fOf‰ft,δ•\Z!,μ,Ü,·□B

fOf%of{t,i}□ó'Ô,δ•\mu,\ddot{U},\cdot\Box B

•½<īfrfbfgfŒŒ□[fg,đŽw'è,μ,Ü,·□B

□Â□¬frfbfgfŒ□[fg,đŽw'è,μ,Ü,·□B

□Å'åfrfbfgfŒ□[fg,đŽw'è,μ,Ü,·□B

f r f b f g f C E [ f g , l • l “ @ • □ , ð Ž w ' è , µ , Ü , · □ B ' l , ð □ ¬ , ³ , , é , Æ f r f b f g f C E [ f g , l • l “ @ , l □ ¬ , ³ , , È , è , Ü , , a □ C — È Z q % % » f X f P □ [ f < , l • l “ @ , l ' à , « , , È , è , Ü , · □ B ' l , ð ' à , « , , é , Æ , » , l < t , E , E , è , Ü , · □ B • È , l • \ C E » , ð , , é , Æ □ C ' l , a □ ¬ , ³ , ¢ , Ü , Ç V B R , ç , µ , - , È , è □ C ' l , ð ' à , « , , é , Æ C B R , ç , µ , , È , è , Ü , · □ B □ % S ú ' l , l 3 0 , Ä , · □ B

fAf<sub>b</sub>f<sub>v</sub>f\_fEf“fRf“fgf□□[f<,]fXfefbfv,đ500 ,É□Y'è,μ,Ü,·□B

fAf<sub>b</sub>f<sub>v</sub>f\_fEf“fRf“fgf□□[f<,]fXfefbfv,đ100 ,É□Y'è,μ,Ü,·□B

fAf<sub>b</sub>f<sub>v</sub>f\_fEf“fRf“fgf□□[f<,]fXfefbfv,ð10,É□Y'è,μ,Ü,·□B

fAfbfvf\_fEf“fRf“fgf□□[f<,]fXfefbfv,ð1 ,É□Y'è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•í□X,μ,½,¢”ÍÍ,ifCf”“\_,ðŽw’è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•í□X,μ,½,¢”ÍÍ,ifCf”“\_,ðŽw’è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•í□X,μ,½,¢”ÍÍ,ifCf”“\_,ðŽw’è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•í□X,μ,½,¢”ÍÍ,ifCf”“\_,ðŽw’è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,¢”íí,ifAfEf g“,\_,ðŽw'è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,¢”íí,ifAfEf g“,\_,ðŽw'è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,¢”íí,ifAfEf g“,\_,ðŽw'è,μ,Ü,·□B

•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,¢”íí,ifAfEf g“,\_,ðŽw'è,μ,Ü,·□B

fOf%of t,iŒ>□Y,îÊ'u,ð□C•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,◊”í,ifCf””\_,Æ,μ,Ä□Y'e,μ,Ü,·□B

fOf%of t,iŒ>□Y,îÊ'u,ð□C•”•a“l,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,◊”íí,ifAfEf g“\_,Æ,μ,Ä□Y'è,μ,Ü,·□B

•”•“|,ÉfrfbfgfŒ□[fg,ð•ï□X,μ½,¢”ÍÍ,í□Å□¬frfbfgfŒ□[fg,ðŽw'è,μ,Ü,·□B

•”•¤“|,ÉfrfbfgfŒ□[fg,ð•ï□X,μ,½,¢”ÍÍ,|□Â'åfrfbfgfŒ□[fg,ðŽw'è,μ,Ü,·□B

žwè,³,ê,½"í,]frfbfgfŒ□[fg,ð•í□X,μ,Ü,·□B

žw'è,³,ê,½"íí,]frfbfgfŒ□[fg,ðŒ³,É–ß,μ,Ü,·□B

žw'è,³,ê,½"íí,]frfbfgfŒ□[fg,ðŒÅ'è,μ,Ü,·□B

fOf%ofit,Ã'l'ð,³,ê,Ã,¢,éGOP “à,íftfŒŒ[f€,]•½ífrfbfgfŒŒ[fg,ð•\Z,µ,Ü,·ŒB

fOf%ft,Ã'l'ð,³,ê,Ã,¢,éGOP “à,íftfŒ□[f€,í]□Å□¬frfbfgfŒ□[fg,ð•Ž!,µ,Ü,·□B

fOf%ft,Ã'l'ð,³,ê,Ã,¢,éGOP “à,íftfŒ□[f€,í□ÅåfrfbfgfŒ□[fg,ð•\Z!,µ,Ü,·□B

fOf%ofit,Ã'l'ð,³,ê,Ã,¢,éGOP,¡Q.ŒW",ð•\Ž!,µ,Ü,·□B

fOf‰ft,Ã'l'ð,³,ê,Ã,¢,éGOP “à,)|| fsfNf`ff,|—ÊŽq‰»fXfP□[f<,ð•\Ž!,µ,Ü,·□B

fOf‰ft,Ã'l'ð,³,ê,Ã,¢,éGOP “à,)P fsfNf`ff,|—Êžq‰»fXfP□[f<,ð•ž|,μ,Ü,·□B

fOf‰ft,À'l'ð,³,ê,Ã,¢,éGOP “à,¡B fsfNf`ff,¡—Êžq‰»fXfP□[f<,ð•Ž!,µ,Ü,·□B

'□ftfŒ□[f€□”,đ•\Ž!,μ,Ü,·□B



fGf“fR□[fh,μ,%ftf@fCf<,]—\zftfCfY,Å,·□B

*fXfgfŠ□[f€'S'l,]•½<īfrfbfgfŒ□[fg,ð•\žl,μ,Ü,·□B*

fXfgfŠ□[f€'S'i,l't,Å,]□Å□¬frfbfgfŒ□[fg,δ•Ži,μ,Ü,·□B

fXfgfŠ□[f€'S'!,l't,Å,]□Â'åfrfbfgfŒ□[fg,ð•Ž!,μ,Ü,·□B

□Â□¬frfbfgfŒ□[fg,É,È,éf|fCf“fg,}f^fCf€fR□[fh,ð•Ž!,μ,Ü,·□B

□Å'åfrfbfgfŒ□[fg,É,È,éf|fCf“fg,}f^fCf€fR□[fh,ð•\Ž!,μ,Ü,·□B

fXfgfŠ□[f€'S'!,]•½<īQ.ŒW□”,ð•\Ž!,μ,Ü,·□B

fXfgfŠ□[f€'S'i,l't,Å,]□Å□¬Q.ŒW□”,đ•\Ž!,μ,Ü,·□B

fXfgfŠ□[f€'S'i, i't, Å, i□Å'åQ.ŒW□”, ð•\Ži, μ, Ü, ·□B

Q.ŒW□”,<sup>a</sup>□Å□¬,É,È,éf|fCf“fg,if^fCf€fR□[fh,ð•\Z!,μ,Ü,·□B

Q.ŒW",äÅ'å,É,éf|fCf"fg,if^fCf€fR[fh,ð•\žl,μ,Ü,·B

fOf%ofit“à,ÀŒ»□Ý'l'ð,³,ê,Ä,éf|fCf“fg,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%ofit“à,ÀŒ»□Ý'l'ð,³,ê,Ä,éf|fCf“fg,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%ofit“à,ÀŒ»□Ý'l'ð,³,ê,Ä,éf|fCf“fg,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

fOf%ofit“à,ÀŒ»□Ý'l'ð,³,ê,Ä,éf|fCf“fg,if^fCf€fR□[fh,ð•\Zl,μ,Ü,·□B

~Ü“®f{f^f“,ÀfWfff“fv,·,é‘O,íf|fCf“fg,íf^fCf€fR□[fh,ð•íZ!,μ,Ü,·□B

~Ü“®f{f^f“,ÀfWfff“fv,·,é‘O,íf|fCf“fg,íf^fCf€fR□[fh,ð•ž!,μ,Ü,·□B

~Ü“®f{f^f“,ÀfWfff“fv,·,é‘O,íf|fCf“fg,íf^fCf€fR□[fh,ð•ž!,μ,Ü,·□B

~Ü“®f{f^f“,ÀfWfff“fv,·,é‘O,íf|fCf“fg,íf^fCf€fR□[fh,ð•íZ!,μ,Ü,·□B

~Ú“@f{f^f“,ÀfWfff“fv,·,é‘O,íf|fCf“fg,É~Ú“@,µ,Ü,·,□B

æ“af<sub>f</sub>fŒf<sup>f</sup>Cf<sup>f</sup>Rf<sub>h,ð•\Z{,}l,μ,Ü,</sub>·B

æ“af<sub>f</sub>fŒf<sup>f</sup>Cf<sup>f</sup>Rf<sub>h,ð•\Z{,}l,μ,Ü,·</sub>B

æ“af<sub>f</sub>fŒf<sup>f</sup>Cf<sup>f</sup>Rf<sub>h,ð•\Z{,}l,μ,Ü,·</sub>B

æ“af<sub>f</sub>fŒf<sup>f</sup>Cf<sup>f</sup>Rf<sub>h,ð•\Z{,}l,μ,Ü,·</sub>B

æ“af<sub>f</sub> f<sub>t</sub> f<sub>E</sub> E [f€,É^Ú“@,μ,Ü,·] B

□ÃŒã,íftfŒ□[f€,íf^fCf€fR□[fh,ð•\Z!,µ,Ü,·□B

□ÃŒã,íftfŒ□[f€,íf^fCf€fR□[fh,ð•\Z!,µ,Ü,·□B

□ÃŒã,íftfŒ□[f€,íf^fCf€fR□[fh,ð•\Z!,µ,Ü,·□B

□ÃŒã,íftfŒ□[f€,íf^fCf€fR□[fh,ð•\Z!,µ,Ü,·□B

□ÂŒã,íftfŒ□[f€,É^Ú“®,µ,Ü,·□B

~Ü“®,µ,½,¢ftfŒ□[f€,}f^fCf€fR□[fh,ð□Ý'è,µ,Ü,·□B

~Ü“®,µ,½,¢ftfŒ□[f€,}f^fCf€fR□[fh,ð□Ý'è,µ,Ü,·□B

~Ü“®,µ,½,¢ftfŒ□[f€,}f^fCf€fR□[fh,ð□Ý'è,µ,Ü,·□B

~Ü“®,µ,½,¢ftfŒ□[f€,}f^fCf€fR□[fh,ð□Ý'è,µ,Ü,·□B

žw'è,μ,%zf^fCf€fR□[fh,É~Ú“®,μ,Ü,·□B

10 • a O, i GOP , É Ú “ ® , µ , Ü , · □ B

1 • a O, i GOP , É Ú “ ® , µ , Ü , · □ B

10 •b'O,iGOP ,É~Ú“@,μ,Ü,·□B

1,Â'Ô,}GOP ,É^Û“®,µ,Ü,·□B

10 •<sup>a</sup> $\square$  $\infty$ , $\lambda$ GOP ,É^Ú“®,μ,Ü, $\cdot$  $\square$ B

1 • aæ, iGOP , ÉÚ“®, µ, Ü, · B

10 •bæ,]GOP ,É^Ú“@,μ,Ü,·□B

1,Âœ,GOP ,ÉÚ“®,µ,·B

Œ»□Ŷ,íf|fCf“fg,Éf‰fxf<ð•t,¬,Ü,·□B

f%ofxf<,đ•t,¬,½Œ»□Ŷ,if|fCf“fg,đfŠfXfg,É“o~,μ,Ü,·□B

"o~^,μ,½f|fCf“fg,∫fŠf×fg,Å,·□B

'l'ð,³ê,A,¢,éf|fCf"fg,ðfŠfXfg,©,ç□í□œ,µ,Ü,·□B

3:2 *f* v *f* < *f* \_ *f* E *f* " *f* t *f* F [ *f* Y, <sup>a</sup>•í, í, é *f* | *f* C *f* " *f* g, í *f* Š *f* X *f* g, Ä, · □ B, ±, í *f* Š *f* X *f* g, í *f* G *f* " *f* R □ [ *f* h □ Y' è % oo æ - Ä, Ä □ u 3:2  
*f* v *f* < *f* \_ *f* E *f* " *E* Y □ o □ v, ð' ð, µ, Ä *f* G *f* " *f* R □ [ *f* h, ·, é, Ä E Z © " ® " I, É □ i □ ¬, <sup>3</sup>, ê, Ü, · □ B □ i □ ¬, <sup>3</sup>, ê, <sup>1</sup>/<sub>2</sub> *f* Š *f* X *f* g, í *E* ä, Ä *f* } *f*] *f* ...  
*f* A *f* < □ C □ <sup>3</sup>, ·, é, ±, Ä E, <sup>a</sup> Ä, «, Ü, · □ B

fvf< f\_Ef“ftfF□[fY,¤í,íéf|fCf“fg,]f^fCf€fR□[fh,ðŽw'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fY,¤í,íéf|fCf“fg,]f^fCf€fR□[fh,ðŽw'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fY,¤í,íéf|fCf“fg,]f^fCf€fR□[fh,ðŽw'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fY,¤í,íéf|fCf“fg,]f^fCf€fR□[fh,ðŽw'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fY,^a•í,íéf|fCf“fg,)f^fCf€fR□[fh,ð•í□X,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ1 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ2 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

Žw'è,μ,½f^fCf€fR□[fh,©,ç3:2 fvf< f\_Ef“,iž©“@ŒÝ□o,đŠJŽn,μ,Ü,·□Bfvf< f\_Ef“ftfF□[fY,ª•ª,©,ç,È,¢,Æ,«,í,±,±,đ'l'đ,μ,Ä,,¾,³,¢□B

žw'è,μ,%zf^fCf€fR□[fh^È□~,í3:2 fvf< f\_Ef“,lŒÝ□o,ð□s,¢,Ü,¹,ñ□B

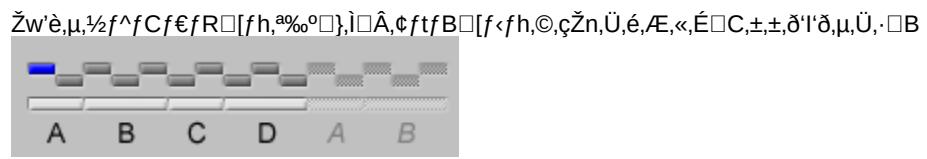
žw'è,μ,½f^fCf€fR□[fh,]□Å□‰,)ftfB□[f<fh,^a fŠfs□[fg,³,ê,½ftfB□[f<fh,],Æ,«,É□C,±,±,ð'l'ð,μ,Ü,·□B

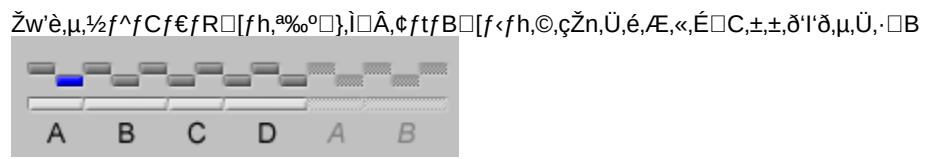
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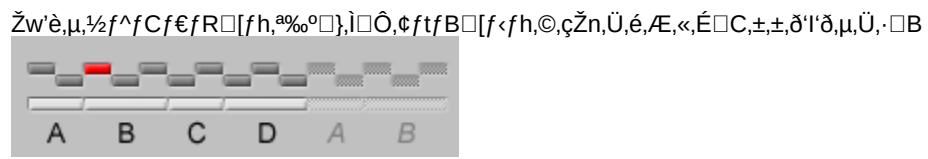
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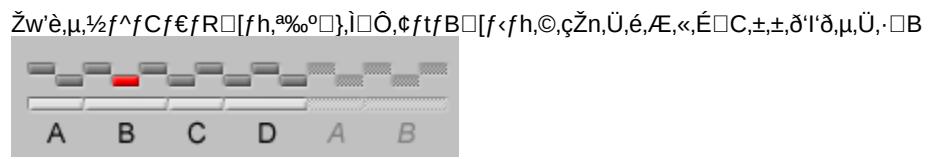
žw'è,μ,%zf^fCf€fR□[fh,©,ç□”,!Ä4"Ô–Ú,iftfB□[f<fh,^fs□[fg,³,ê,%ftfB□[f<fh,],Æ,«,É□C,±,±,ð'l'ð,μ,Ü,·□B

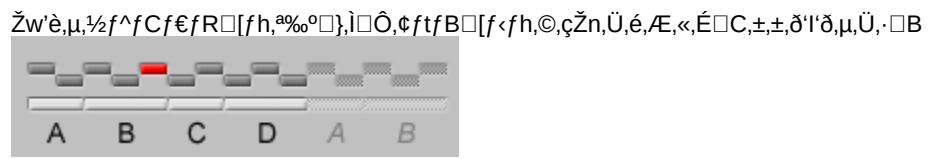
žw'è,μ,%f^fCf€fR□[fh,©,ç□”,!Ä5"Ô–Ú,iftfB□[f<fh,^fŠfs□[fg,³,ê,%ftfB□[f<fh,],Æ,«,É□C,±,±,ð'l'ð,μ,Ü,·□B

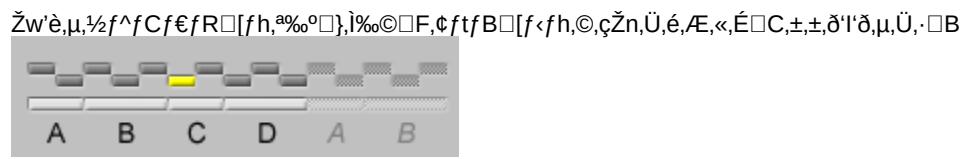


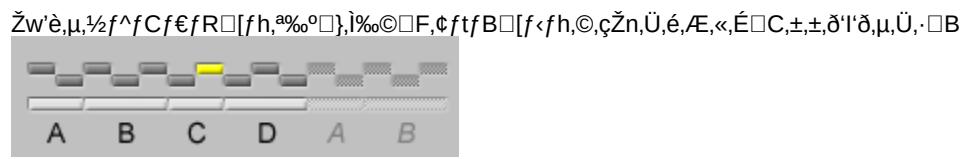


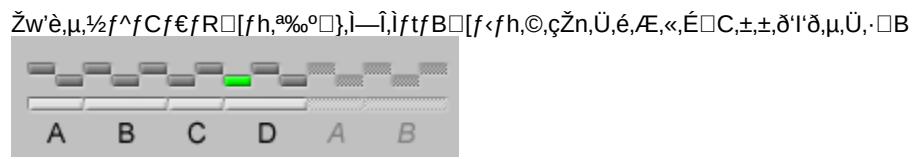


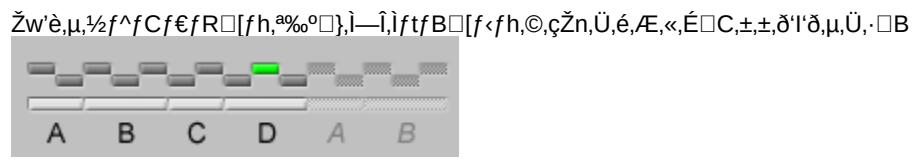












Žw'è,μ,½f^fCf€fR□[fh,‰o□},)—̄iſtfB□[f<fh,©,çŽn,Ü,é,Æ,«,É□C,±,±,ð'l'ð,μ,Ü,·□B



fvf< f\_Ef“□î•ñftf@fCf<,đ'l,Ô½,ß,íf\_f CfAf□fOf{fbfNfX,đŠJ,<,Ü,·□Bfvf< f\_Ef“□î•ñftf@fCf<,í□u3:2  
fvf< f\_Ef“ŒY□o□v,đ'l'đ,µ,ÄfGf“fR□[fh,µ,½,Æ,«,EZ©“®“l,É□i□¬,³,ê,Ü,·□B

□Y'è,μ,%fvf< f\_fEf“ftfF□[fY,δfvf< f\_fEf“fŠfXfg,É“o~,μ,Ü,·□B

fCf""\_ÅŽw'è,³,ê,Ä,¢,éf^fCf€fR□[fh,ðŽæ,è□ž,ÝÜ,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð•í□X,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ1 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ2 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,²ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,³ ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ºAftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,aftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,þftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ª,cfzfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,³2fvf<f\_Ef“,³,ê,Ä,¢,È,®,Æ,«,É‘l'ð,μ,Ü,·□B

□Y'è,μ,%f^fCf€fR□[fh,Æfvf< f\_fEf“ftffF□[fY,δfCf“\_,ÉfRfs□[,μ,Ü,·□B

fCf""\_}fvf<f\_fEf"ftfF□[fY,a—^,l,ç,ê,½,Æ,«,}□CŽw'è,³,ê,½f^fCf€fR□[fh,}fvf<f\_fEf"ftfF□[fY,ðŒvŽZ,µ,Ü,·□B

fCf""\_`fvf< f\_Ef“ftfF□[fY,a—^,l,ç,ê,½,Æ,«,]□CŽw'è,³,ê,½fvf< f\_Ef“ftfF□[fY,]f^fCf€fR□[fh,ðŒvŽZ,µ,Ü,·□B

fCf""\_ÅŽw'è,³,ê,Ä,¢,éf^fCf€fR□[fh,ðŽæ,è□ž,ÝÜ,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð•í□X,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ1 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ2 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,²ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,³ ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ºAftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,aftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,þftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ª,cfzfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,³2fvf<f\_Ef“,³,ê,Ä,¢,È,®,Æ,«,É‘l'ð,μ,Ü,·□B

□Y'è,μ,%f^fCf€fR□[fh,Æfvf< f\_fEf“ftffF□[fY,δfCf“\_,ÉfRfs□[,μ,Ü,·□B

fCf""\_}fvf<f\_fEf"ftfF□[fY,a—^,l,ç,ê,½,Æ,«,}□CŽw'è,³,ê,½f^fCf€fR□[fh,}fvf<f\_fEf"ftfF□[fY,ðŒvŽZ,µ,Ü,·□B

fCf""\_`fvf< f\_Ef“ftfF□[fY,a—^,l,ç,ê,½,Æ,«,]□CŽw'è,³,ê,½fvf< f\_Ef“ftfF□[fY,]f^fCf€fR□[fh,ðŒvŽZ,µ,Ü,·□B

fCf""\_ÅŽw'è,³,ê,Ä,¢,éf^fCf€fR□[fh,ðŽæ,è□ž,ÝÜ,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð□Ý'è,μ,Ü,·□B

fvf< f\_Ef“ftfF□[fYŒvŽZ,]Šî□€,Æ,È,éf^fCf€fR□[fh,ð•í□X,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ1 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]!æ2 ftfB□[f<fh,ðftf@□[fXfgftfB□[f<fh,Æ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,²ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,]ftfŒ□[f€,³ ftfB□[f<fh,δ□\□¬,·,é,Æ,«,É'l'δ,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ºAftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,aftfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ½f^fCf€fR□[fh,ª,bf†fŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,ª,cfzfŒ□[f€,Å, ,é,Æ,«,É'l'ð,μ,Ü,·□B

žw'è,μ,%f^fCf€fR□[fh,³2fvf<f\_Ef“,³,ê,Ä,¢,È,®,Æ,«,É‘l'ð,μ,Ü,·□B

□Y'è,μ,%f^fCf€fR□[fh,Æfvf< f \_fEf“ftffF□[fY,δfCf““,ÉfRfs□[,μ,Ü,·□B

fCf""\_}fvf<f\_fEf"ftfF□[fY,a—^,l,ç,ê,½,Æ,«,}□CŽw'è,³,ê,½f^fCf€fR□[fh,}fvf<f\_fEf"ftfF□[fY,ðŒvŽZ,µ,Ü,·□B

fCf""\_`fvf< f\_Ef“ftfF□[fY,a—^,l,ç,ê,½,Æ,«,]□CŽw'è,³,ê,½fvf< f\_Ef“ftfF□[fY,]f^fCf€fR□[fh,ðŒvŽZ,µ,Ü,·□B

□Y'è,μ,%fvf< f\_Ef“ftfF□[fY,δ•\Z!,μ,Ü,·□B

ABCD •úŽ®, Åfvf< f\_fEf“ftfF□[fY, ðŽw'è, ·, é, ÅE, «, í□C, ±, ì□}, ðŽQ□I, É, μ, Ä,, ¾, ³, ¢□B

fCf“fgf‰fu f bfN, l—Ežq‰»s—n,l(i,j)¬•a(i < j),δ(j,i)¬•a,EfRfs□[.μ, Ü, · □B

fCf“fgf‰fu f bfN, l—Ežq‰»s—n,l(i,j)¬•a(i>j),δ(j,i)¬•a,EfRfs□[.μ,Ü,·□B

fCf“fgf‰fuſ□fbfN,ſ—ÊŽq‰>□ſ—ñ,ſ(i,j)□¬•a,Æ(j,i)□¬•a,ð“ü,ê'Ö,!Ü,·□B

fmf“fCf“fgf‰fufofbfN,i—ÊŽq‰»os—ñ,l(i,j)¬•a(i <j),δ(j,i)¬•a,ÉfRfs□[μ,Ü,·,oB

fmf“fCf“fgf‰fufofbfN,i—ÊŽq‰»os—ñ,l(i,j)¬•a(i>j),δ(j,i)¬•a,ÉfRfs□[μ,Ü,·,oB

fmf“fCf“fgf‰fu f bfN,i—ÊŽq‰»s—ñ,l(i,j)❑¬•a,ÆE(j,i)❑¬•a,ð“ü,ê'Ö,!Ü,·❑B

—Èžq‰»□s—ñ,lfvfŠfZfbfgfŠfxfg,À,·□BŒ»□Ý,ì□Ý'è,ð,±,lfŠfxfg,É'ç‰À,·,é,±,Æ,à,À,«,Ü,·□B

Œ»□Ý,í—ÊŽq‰»□s—ñ,í□Ý'è,ðfvfŠfZfbfgfŠfXfg,É•Û'¶,µ,Ü,·□B

Œ»□Ý'l'ð,³,ê,Ä,¢,é—ÊŽq‰»□s—ñ,ì□Ý'è,ðfvfŠfZfbfgfŠfXfg,©,ç□í□œ,µ,Ü,·□B



