# DYdUfh a Ybh cZ Cc a a i b]WUh]cb Afhg Cc``Y[Y cZ Afhg UbX SW]YbWYg

# FUW i`hm

 $\label{eq:constraint} $$7\f]g6`Uf(1--+).5ggcVJUHYDfcZeggcfcZ7caaib]Wh]cb5fhg7ccfX]bUfcfcZ8AGUbX5Wh]b[7\Uf.6.5.,Ib]cbIb] $$ Ib]jYfg]mr(A.5.UbXD\.8.,Ib]jYfg]mr(ZAYad\]g$ 

**Ghý Y6Yj Yf m**(1--3). 5 ggc VJUY Dfc Z/ggc f cZ7 ca a i b]Wh cb 5 fhg 6.5., I b]j YfghmcZ; Ycf[]U/A.5., 5 i Vi fb I b]-j Yfghm

 $\label{eq:started_st$ 

 $\label{eq:started} \begin{array}{l} \textbf{8U} \ \textbf{JX6i} \ \textbf{f}_{Y}(1-, *). \ \textbf{DfcZiggefcZH} \ \textbf{YHYUbX8} \ \textbf{JfYMcfcZh} \ \textbf{YH} \ \textbf{YHYUfY}. \ \textbf{6.G5.}, < ci \ \textbf{grb} \ \textbf{6Udhgh7c} \ \textbf{``Y}[ \ \textbf{YA} ... 5., I \ \textbf{b}] - \textbf{j} \ \textbf{YfglmcZ} < ci \ \textbf{grb}. \end{array}$ 

K Unby  $\infty \ bgcb$  (1- \* 1-\*, /1- - +). 5 ggc V/UhYDfcZ/ggcf cZ7ca a i b]Wh]cb 5 fbg 6.5., I b]cb I b]j Yfglm/A .5., Di fXi Y I b]j Yfglm

8 UffYb A ]WUY (2002). 5 gg]gflbhDfcZ/ggcf cZH\YUfY. 6.5., Ci UW]fU 6Udh]ghI b]j Yfghm/A.:.5., I b]j YfghmcZ Gci h\Yfb A ]gg]gg]dd].

>**Ja JYbYaUb** (1---). 5 gg]gfLbhDfcZ/ggcf cZ7ca a i b]Wh]cb 5 fbg UbX 8 ]fYMicf cZJ ]gi U 7ca a i b]Wh]cb. 6.5., Ci UW]HJ6Udh]ghI b]j Yfg]m/A.5., Cci h\k YgMfb 6Udh]ghH\Yc`c[]W/GYa ]bUfm

## M]gg]cb ShUhY a Ybh

Gi XYbłga Ucf]b[]b Wa a i b]Wł]cb Ułgk]``, ]b h Y]f UfYUcZWbWblfUl]cb, i bXYfgłUbXh Yh Ycf]Yg df]bWd`Yg UbX \]ghcfmcZWa a i b]Wł]b[Ułg/XYa cbgłfUłYWa dYhbWh]b k f]lhhb, cfU, UbXj]gi U Wa a i b]Wł]cb g\_]``g/UbX XYa cbgłfUłY\_bck `YX[YcZhY]a dUMicb gcVJYhm

# Ciff]Wi`ia

60 H\Y 8 YdUfha YbhcZXfg U k ]XY fUb[Y cZWi fgYg XYg][bYX hc a YYhh\Y Wa d`Yl UbX g][b]ÚWbhh\YcfYl]W/UbX Wa a i b]Wl]cb g\_]``fYei ]fYa YbhgcZghi XYbhg

H\Y8YdUfha Ybh]gUZÚ]UhXk ]ĥ gỹ YfU dťc[fUa g) YbWUbXh\YGci h\YUghtfb H\YUfY7cbZfYbW. ci fbU]ga, 6fcUXWghb[,UbXDi V]WFYUhcbg/5Xj Yfhgb[ a Ucfga Unbcha ]bcfk ]h\]bh\Y8YdUfha Ybh,YI Wdh ]b H\YUfY/CdYYW cf:]`a Chi X]Yg

- = A Ucf ]b H\YUfYUbXGdYYWÍ 39cf 42\ci fg
  - 5. 7CA 112, 200, 211, 23), (0) Ì 1) \ci fg
  - 6. CdYYW 9a d\Uggd 2(\ci fg
    - 1. 7CA 311, 320, 32), (30
    - 2 7CA 9 YM j Yg 12\ci fg
  - 7. H\YUfY9a d\Ugg 2+\ci fg
    - 1. 7CA 113, 2(0, 330, 3(1, 3(2, 3)0, (12
    - 2 7CA 3() cf 311
    - 3 7CA 9°₩MjYÌ3\cifg
  - 8. HYUWYf @Wbgi fY9a d\Ugigi 2(\ci fg
    - 1. 7CA 113, 2(0, 311, 320, 330, 3(1, 3(2, (12
    - 2. DfcZygglcbU 9Xi Whlcb. 981 1) (0, 2) (0, 32\*, (2\*, (3) / DGM213, 31, / G9 22).
    - 3 7ca d`Yhjcb cZUdd`]WWYdcfhjcbgcZhYDfU ]gGYf]Yg=
    - (. : cf UXX]ljcbU ]bZcfa Ujcb, gYYh Y5 gg]gJUbh8 YUb Zcf HYUWYf 9Xi Wijcb UbX5 WiYX]lLljcb.
- = A Ucf ]b  $\times$ i fbU]ga Í 44\ci fg
  - 5. 7CA 120, 121, 200, 320, 321, 323, 3)), (1), (1-, (30
  - 6. 7CA 210Ì2gYa YghYfg 1\cifYUW
  - 7. CbYcZ 7CA 3\*0/5FH221, 231
  - 8.7CA 9`YMdjiYgÌ-∖cifg

- == A Ucf ]b 6fcUXWg]b[Í 42∖ci fg 5. 7CA 120, 121, 220, 230, 2(), (1-, (30
  - 6. 7CA 320cf 3) Í 3\ci fg
  - 7. GYYM- \ci fg 321, 32), 32+, 3(+, (0\*, (10
  - 8. 7CA 9`YMdj YgÌ- \ci fg
- =J. A Ucf ]b Di V]WFYUJcbg/5Xj YflJgb[Í 44\ci fg
  - 5. 7CA 120, 121, 200, 320, 321, 323, 32), 3)), 3\*0, (1), (1-, (23, (30
  - 6. 7CA 210 2 gYa Yghtfg 1 i f YUW
  - 7. 7CA 9`YWaj YgÍ 3\cifg
- J. 8][]HU A YX]UGhi X]YgA Ucf
  - 5. 7cfYfYei ]fYa YbhgZcf U`Ya d\UgYgÌ3 \ci fg
    - 1. 5 FH 120, 221, 231, 3()
    - 2. 7CA 220, 320, 3\*), (1-
    - 3 7G7 11), 321, 3\*0, 3\*)
    - (. 8][]HU A YX]UGhi X]YgGYa ]bUf (-0
  - 6. 7ca a i b]Wh]cb 5 flg9a d\Ug]gfYei ]fYa YbhgÌ2( \ci fg
    - 1. 7CA 121, 323, 32), (30/A?H32,
    - 2 GYYMah fYYWa fgYg 7CA 230, 3)), (10, (23, (,, /A?H(2(
  - 7. 5 fh9a d\Lgg(2, \ci fg) LbX7ca di hhf GWMbW9a d\Lgg(23\ci fg) GYYfYgdWhj YXYdUfha YblgZcf XYLJ`g
- J = 6 fc UXWg db [A] bcf 21 ci fg
  - 5. 7CA 120, 121, 220, 230
  - 6. GYYMJ- \ci fg 7CA 320, 32), 3(+, (03, (10, (1-, (30
- J = D V WFYU cbg/5X yH gb[A] bcf 21 ci fg
  - 5. 7CA 120, 121, 323, (1-, (23
  - 6. GYWM\* \ci fg 7CA 210, 320, 321, 32), 3\*0, (1), (30/5 FH221, 231
- J = xi fbU]ga A bcfí 21 ci fg
  - 5.7CA 120, 121, 210, 321, (1)
  - 6. GYYMit\* \ci fg 7CA 320, 323, 3\*0, (1-/5FH221, 231
- =L. H\YUfY/GdYYWA ]bcf1 21\ci fg
  - 5. 7CA 112, 113, 211, 23), 2(0
  - 6. GYYMi\* \ci fg 7CA 301, 311, 3)), 330, 3(1, 3(2, 3(), 3)0, (0), (12
- L. : ]`a Ghi X]YgA ]bcfÍ 18cf 22\ci fg
  - 5. FYei ]fYXZcf Vch HUWg 7CA 32, Í 3\ci fg
  - 6. HfUWCbYÍ 1) ∖ci fg
    - 1. FYei ]fYX 7CA 33, 7< F 3(, Í \* \ci fg
    - 2 GYYMA3 5FH(2, /7CA 301, (3, /9B; 311/De@((,
  - 7. HW Hk cí 1- ci fg
    - 1. GYYM1.5FH(2,7CA 301, 33, (3, /9B; 311/D<@((,
    - 2 5 Xa ]gg|cb hc @cg5b[YYg:]`a Chi X]Yg7YbhYf.
      - U 7CA 30+, 3(, , (, (Í 10\ci fg
      - V. GYYMA2 7CA (2), (2,, ((0, (-)
- L= D\chc^ci fbU]ga A ]bcfí 21 \ci fg
  - 5.5FH231,7CA 121
  - 6. 7CA 23\*, 32\*, 33\*, 3(\*, (2\*
  - 7. =Z5 FH231 cf 7CA 121 ]gfYei ]fYXVmhYgh XYbhga Ucf, fYd`UWhY\ci fg]bhYa ]bcf k ]h5 FH232, 7CA 321, cf 7CA (1).

#### ShiXYbh Of [Ub]nUh]cbg

$^{\circ}$ E $^{\circ}$ $^{\circ}$ bcfÍ 21 AZ 7C	g A° ° °
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#### 235 = bh/fdYfgcbU 7ca a i b]W/jcb (3)

=XYbl]ZmWa a i b]Wl]cb dfcVYa g]b]bhYdYfgcbU fYU]cbg\]dg]bW X]b[ Yh]W Wa a i b]Wl]cb, gYZX]gWcg fY, dYfWdl]cb, ]bhYfj]Yk]b[, WbÛ]Wa UbU]Ya Ybh j YfVU UbX bcbj YfVU Wa a i b]Wl]cb. H\Y gli XYbhk]`` Yl \]V|h Wa dYhYbh`Ub[ i U[Yg\_]``gh\fci [ \ cfU fYdcfhg k cf\_]b[ ]b XmLXgUbX ga U`[fci dg UbXWLggga i `U]cbg

#### 236 D\chc^ci fbU]ga =(3)

DfYfYei ]ghY. 5FH2311 D\chc[fUd\m=

H\YVUglVgcZgYY]b[UglcfmhY`]b[d\chc[fUd\UbX`YUfb]b[hcUdd`mh\YVUglVgcZd\chc[fUd\mhc\YdWaaib]WhY UaYggU[Y.9ad\Uglgk]``VYd`UWX cbgMh]b[\][\glubXUfXgcZj]giU]bhY[f]mUbXWaaib]Wh]cbMh]VgUbX cb XYjYcd]b[UbibXYfgUbX]b[cZh\Yfc`YcZd\chc^cifbU]ga]bg\Ud]b[UbXfYÛVW]b[WbhYadcfUfmgcVJMmH\Y \]ghcfmcZd\chc^cifbU]ga, WffYbhhfYbXgUbXh\YjUf]YXWU`Yb[YgZcibX]bh\]gÚYXk]``VYYId`cfYX.

#### 240 5 Wijb[ H\YcfmLbXHWb]ei Y(3) G

DfYfYei ]g]H/. 7CA 113 JUF]ci gUMjb[ h\Ycf]YgUbXdfUMjWgk ]h\Ya d\Ug]gcb YlYfVjgYg]b d\ng]W/ lfU]b]b[, j cW/ fYdfcXi Wjcb, WUFUMMf dfc^YMjcb, UbXh\YUYgh\YjVgcZUMjb[.

#### 245 6fcUXWghDYfZcfa UbW(3)

8 Yj Y cda YbhcZdfcZygglcbU j cW, j ]gi U, dYfgcbU]hmUbX dYfZcfa UbW g\_]``g Vmi gY cZgla i `UhX bYk gWgrg ]bhffj ]Yk g UbX gWJdhbUffUljcbg

299 F	]V	,
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8Yj Yf	),Ua	ffÜ	f	Q ][	a i	с Ү -
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#### 326 GcVJU 8 cWa YbHfm

DfYf Yei ]glY. 7CA 23\* GcVJU XcWa YbHJmd\chc'ci fbU]ga ]gUb UHYa dhhc VYUf k ]lbYgg hc Vf]b[ UHYbHjcb, UbX hc UXj cWHY. 5 h]hg VYgh ]hHf]Yg Ugc hc Wa a i b]WHY gca Yh]b[ UWbWfbYX UbX ]bZcfa YX d\chc[ fUd\Yf ZYhk \Yb \Y/g\Y fYYUgYX h\Y Wa YfUgg\i HYf. GcVJU XcWa YbHTmd\chc'ci fbU]ga Wa a i b]WHYgh\fci [ \UWa d`Yl X]gH``UHcb cZj ]gi U Hi h UbX ]bHYfdfYHJjcb. H\]gWi fgYk]`` HU\_YUWcgY`cc\_ Uhk cf\_ h\Uh\Uga UXYUb ]a dUMicb ]hgU X]YbWg UbX Uhh Y d\chc[ fUd\Yfgk \c dfcXi WX ]h HYWb]Wi dfcÚVJYbWnUbX j ]gi U Uk UfYbYggk ]``WbHbi Yhc VfcUXyb.

#### 327. =bhhfUMij YA YXJU(3)

DfYfYei ]g]HY. 7CA 220. Dfc<sup>\*</sup>YMaVUgYXUddfcUW hck UfXXYj Ycd]b[g\_]``g]b h\YX YfYa A ]b h\Y° Ugc hc Wa a i b]WHY g<sub>0</sub> X A

#### 355 7ca a i b]Wh]cb H\Ycfm& FYgYUfW (3)

A Ucf h\Ycf]Yg a cXY`g UbX WbWdh U]nUhcbg cZWa a i b]Whcb k ]h\Ya d\Ugg cb dfUhlWV Udd`]Whcbg cZfY-gYUW.

# 360 Di V]WJcb 8 Yg[ b (3)

I glb[ \UbXg-cb Yl dYf]YbWg hc YX]h, XYg[[b, `Uhrci h, UbX XYj Y'cd Wa YfUfYUXmXcWa Ybhg hc dfcj ]XY dfUMJW \_bck `YX[ YcZgUHY-cZh\Y-Ufhdi V`]g\]b[ hYWbc`c[ m

## 365. 7 ca di hhf-A YX]UhX 7 ca a i b]Wd]cb (3)

5 VYbX]b[ cZh YcfY]W UbX dfUMJW j ]Yk gcZWa a i b]Wh]cb h fci [ \ Wa di hfg Wbg]XYf]b[ h Ya cj Ya Ybhhc

# $485 = bhfbg \ ]d \ ]b \ FUX]c \ 6fc UXWg \ ]b[ \ (3)$

# 440 5 $V_{0}b[] b < c^{h} c < C(3)$

H\YdfUMJWUbXdfcWggcZUMJb[]bhY<c``mkccXUfYbU HcdJWg]bWfXYhYfc`YcZU Ybhg a UbU YfgWgHb[ X]fYMcfgUbXib]cbg/Yei]mkUj YfhYUfYUbXg\ckWgYg/d\chcgUbXfYgi a fg/UbXhYU X]h]cbdfcWggi gYXZcf