

a2KB @ miQK iB+ :2M2` iBQM Q7

J tBK2 a+? K^R Bⁱ b ` a #- i*2^u / ` B+ " ^R biQmH

C Mm `v kj kyRd- >BS1 *- AJS *h

^R IMBp2`bBiv Q7 ai` b#Qm`;- AM`B

^k L iBQM H IMBp2`bBiv Q7 _Qb `BQ

* QKTBH iBQM PTiBKBx iBQM

Ç * QKTBH2 iBK2

Ç 2X;X T ` HH2HBx iBQM- p2+iQ`Bx iBQM- E

Ç 1ti` +i bi iB+ BM7Q`K iBQMb

Ç :2M2`B+

Ç .vM KB+ QT iBKBx iBQM UCmbi@BM@iBK2

Ç 2X;X i?`2 / H2p2H bT2+mH iBQM- bT2+B H

Ç aT2+mH iBQM rBi? TQbbB#H2 `QHH# +F

Ç aT2+B HBx iBQM i`mMiBK2

a +`2/ `m H2,2`p2 a2K MiB+b

a2K MiB+b S`2b2`p iBQM Bb MQi Hr vb _2

q? i B7 r2 /QMöi + `2 #Qmi b2K MiB+I
aBKmH iBQM JmHiBK2/B

_2H tBM; b2K MiB+b HHQrb M2r QTIB

Ç G2bb T`2+BbÇ G2bb ++m` i2Ç / TiBp2
KQ/2Hb +QKTmi iBQMb i2+?MB[m2b

S ` Q p B / 2 M SA 7 Q ` TT ` Q t B K i B Q M i ? i B b ,
R X b v i Q m b 2 7 Q ` i ? 2 T ` Q ; ` K K 2 `
k X # H 2 i Q i ` / 2 + + m ` + v 7 Q ` b T 2 2 /
j X b m i Q K i B + b T Q b b B # H 2

$$R \times M i \cdot Q / m + i B Q M$$

$$k X / T i B p 2 J 2 b ? _ 2 \} M 2 K 2 M i$$

$$j X / T i B p 2 * Q / 2 _ 2 \} M 2 K 2 M i$$

$$9 X * b 2 b i m / v , 1 m H 2 \cdot B M \sim m B / b B K m H i B Q M$$

$$8 X * Q M + H m b B Q M$$

/ TiBp2 J2b? _2}M2K2Mi

*? M;2 i?2 ++m` +v Q7 bQHmiBQM BM +2`i
bQHmiBQM Bb #2BM; + H+mH i2/ U"2`;2` 2i

Ç JQ`2 M20i2/KQ`2 `2}M2
Ç A;MQ`2 `2;BQMb rBi?Q
Ç h?2 ;`B/vMb KEM+ / 2pQH p
rBi? i?2 bBKmH iBQM

J_ ;`B/ 7Q` b?Q+F
BKT +iBM; M BM+HBM2/ bHQT2

/ TiBp2 * Q/2 _2}M2K2Mi

S`QpB/2 / TiBpBiv rBi?Qmi `2[mB`BM; i?2 T
KQ/B7v ?Bb +Q/2

Ç 1tTHQBib /QK BM@bT2+B}+ FMQrH2/;2

Ç / Tib +QKTmi iBQM /vM KB+ HHv

Ç miQK iB+ HHv ;2M2` i2/ / TiBp2 +Q/2

M/ i i?2 +QKTBH2` H2p2H,

Ç :2i BM7Q`K iBQM 7`QK mb2` T` ;K b

Ç lb2 `mMiBK2 iQ / Ti i?2 +QKTmi iBQMb

Ç :2M2` i2 bT2+B HBx2/ +Q/2 rBi? TQHv?2/

* _ l b 2 ` S ` ; K b

O T ` ; K + ; ` B U b B x 2 V

: ` M m H ` B i v Q 7 i ? 2 / T i B p 2 ; ` B /

O T ` ; K + K Q M E U Q i - + Q H H 2 + i Q ` V

A M T m i / i 7 Q ` / 2 + B b B Q M K 2 + ? M B b K

O T ` ; K + H i 2 ` M M B p 2 U i v T 2 - 2 z 2 + i V

a T 2 + B } 2 b r v Q 7 T ` Q p B / B M ; / T i B p B i v i Q +

O T ` ; K + b i ` i 2 U v + ` B i 2 ` B - H i 2 ` M i B p 2 V

a T 2 + B } 2 b B M r ? B + ? + b 2 M H i 2 ` M i B p 2 ? b

* Q/2 rBi?Qmi * _

L22/ Q7 / TiBpBiv 7Q` i?Bb F2`M2H + HH2/ i 2 +

R
k
j
9
8
e
d
3
N
Ry

7 Q `UB M F 4 yc F I bQH p2`nbi2Tb c YYF V

7 Q `UB M B 4 yc B I4 Jc YYB V

7 Q `UB M D 4 yc D I4 Lc YYD V

+QKTmi iBQMUF - B - D - /2MbBiv - XXX V

* Q/2 rBi? * _

h?2 T` ;K b `2H ti?2 b2K MiB+b 7Q` i?2 7QHHR

R | OT` ;K + ` ;` B / UkV

k | OT` ;K + ` KQMBiQ` U / 2MbBiv (D) (B) - + 2HHn+

j | OT` ;K + ` Hi2` M iBp2 ?B;?UT ` K2i2` - bQHrp

9 | OT` ;K + ` Hi2` M iBp2 HQRUT ` K2i2` - bQHrp2

8 | OT` ;K + ` bi` i2;v / B` 2+iUy - ?B;?V

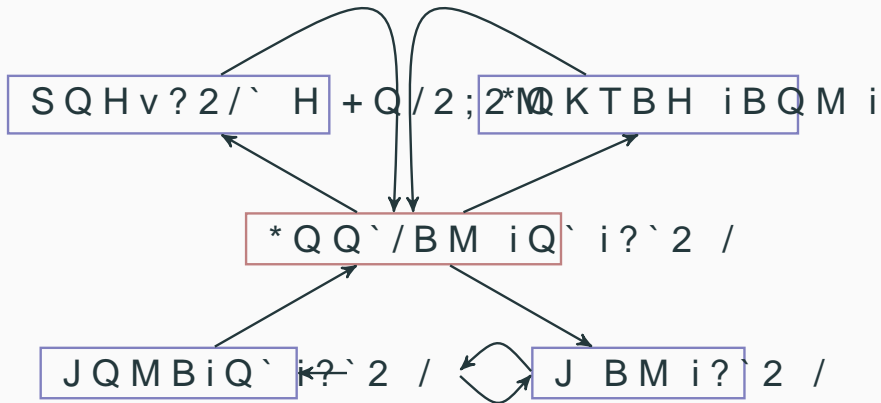
e | OT` ;K + ` bi` i2;v / B` 2+iUR - HQRv

d | 7 Q` UB MF 4 yc F l bQHrp2` nbi2Tbc YYFV

3 | 7 Q` UB MB 4 yc B l4 Jc YYBV

N | 7 Q` UB MD 4 yc D l4 Lc YYDV

Ry | +QKTmi iBQMUF - B - D - / 2MbBiv - XXXV



.2/B+ i2/ i?'2 /b iQ ; i?'2` BM7Q`K iBQM b M/R;2M

1ti` +iBM; _mMiBK2 AM7Q`K iBQMb

q? i Bb i?2 `2H2p Mi / i \

R	OT` ;K +` ;` B / UkV
k	OT` ;K +` KQMB/2Q`Biv(D)2B)Hn+QHH2+iQ`V
j	OT` ;K +` Hi2`M iBp2 ?B;?UT`K2i2` - bQHp
9	OT` ;K +` Hi2`M iBp2 HQRUT`K2i2` - bQHp2
8	OT` ;K +` bi` i2;v /B`2+iUy- ?B;?V
e	OT` ;K +` bi` i2;v /B`2+iUR- HQRv
d	7Q`UBMF 4 yc F l bQHp2`nbi2Tbc YYFV
3	7Q`UBMB 4 g B I 4 Jc YYBV
N	7Q`UBMD 4 g D I 4 Lc YYDV
Ry	+QKTmi iBQMUF- B - D - /2MbBiv - XXXV

OT` ;K +KQMEUQi - +QHH2+iQ`V

AMTmi / i 7Q` /2+BbBQM K2+? MBbK

Ai2` iBQM .QK BM M/ ++2bb 6mM+iBQM

$$\begin{array}{c} ++2bb \\ \uparrow \text{BD} = (\text{DB} \\ \longrightarrow \end{array}$$

Ai2` iBQM /QK BM

. i bT +2

1ti` +iBM; ai iB+ :`B/ aBx2

>Qr Km+? ;` MmH `Biv Bb `2[mB`2/\

R OT` ;K +` ;`B/UkV

k OT` ;K +` KQMBiQ`U/2MbBiv(D)(B)- +2HHn+

j OT` ;K +` Hi2`M iBp2 ?B;?UT`K2i2`- bQHp

9 OT` ;K +` Hi2`M iBp2 HQRUT`K2i2`- bQHp2

8 OT` ;K +` bi`i2;v /B`2+iUy- ?B;?V

e OT` ;K +` bi`i2;v /B`2+iUR- HQRv

d 7 Q`UB M F 4 yc F l bQHp2`nbi2Tbc YYFV

3 7 Q`UB M B 4 yc B l4 Jc YYBV

N 7 Q`UB M D 4 yc D l4 Lc YYDV

Ry +QKTmi iBQMUF- B - D - /2MbBiv- XXXV

OT` ;K +` BUbBx2V

:` MmH `Biv Q7 i?2 / TiBp2 ;`B/

Ai2` iBQM .QK BM M/ ++2bb 6mM+iBQM

h?2 / i /QK BM Bb iBH2/ rBi? `2bT2+i iQ i

1ti` +iBM; i?2 *`Bi2`B

>Qr iQ +QH2+i BM7Q`K iBQM 7Q` 2 +? iBH2

R OT` ;K +` ;`B/UkV

k OT` ;K +` KQMBiQ` U/2MbB+i2(HDn)(QBi2+iQ`

j OT` ;K +` Hi2`M iBp2 ?B;?UT` K2i2` - bQHp

9 OT` ;K +` Hi2`M iBp2 HQRUT` K2i2` - bQHp2

8 OT` ;K +` bi` i2;/B`2+iUy- ?B;?V

e OT` ;K +` bi` i2;/B`2+iUR- HQRV

d 7 Q`UB M F 4 yc F l bQHp2`nbi2Tbc YYFV

3 7 Q`UB M B 4 yc B l4 Jc YYBV

N 7 Q`UB M D 4 yc D l4 Lc YYDV

Ry +QKTmi iBQMUF - B - D - /2MbBiv - XXXV

OT` ;K +bi` i2Uv+`Bi2`B - Hi2`M iBp2V

aT2+B}2b BM r?B+? + b2 M Hi2`M iBp2 ? b

S`2+BbBQM G2p2H J TT2/ QM i?2 . i aT +

1 +? iBH2 ;2ib T`2+BbBQM H2p2H bbB;M2/

→
J TTBM; i?2

T`2+BbBQM Qp2`

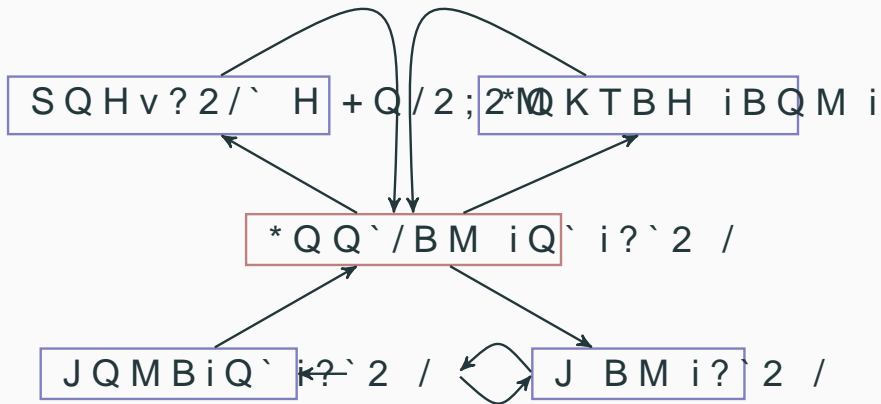
i?2 / i bT +2

S`2+BbBQM K i`Bt

S`2+BbBQM 7Q`

/ i +QQ`/BM i2

_mMiBK2 AM7Q`K iBQM 1ti` +iBQM



1ti` +iBM; / TiBpBiv AM7Q`K iBQM

LQr i? i i?2 T`2+BbBQM K i`Bt Bb FMQrM- r?
T`2+BbBQM H2p2H\

R OT` ;K +` ;` B/ UkV
k OT` ;K +` KQMBiQ` U/2MbBiv(D)(B)- +2HHn+
j OT` ;K +` Hi2`M ?Bp2UT` K2i2`- bQH p2`nbi2T
9 OT` ;K +` Hi2`M HbQp2UT` K2i2`- bQH p2`nbi2Tb
8 OT` ;K +` bi` i2;v /B`2+iUy- ?B;?V
e OT` ;K +` bi` i2;v /B`2+iUR- HQrV
d 7 Q`UB M F 4 yc F bQH p2`nbi2T
3 7 Q`UB M B 4 yc B I4 Jc YYB V
N 7 Q`UB M D 4 yc D I4 Lc YYD V
Ry +QKTmi iBQMUF- B- D- /2MbBiv- XXXV

OT` ;K +Hi2`M MBp2UivT2- 2z2+iV

aT2+B}2b r v Q7 T`QpB/BM; / TiBpBiv iQ +

* Q/2 rBi? _mMiBK2 h2bi

:2M2`B+ BKTH2K2Mi iBQM Q7 i?2 F

R | 7 Q `UB M F 4 yc F l bQH p2`nbi2Tbc YYFV

k | 7 Q `UB M B 4 yc B l4 Jc YYB V

j | 7 Q `UB M D 4 yc D l4 Lc YYD V

9 | B 7U+QKTmi iBQMnM22/2/UF- B - D V V

8 | +QKTmi iBQMUF- B - D - /2MbBiv - XXX

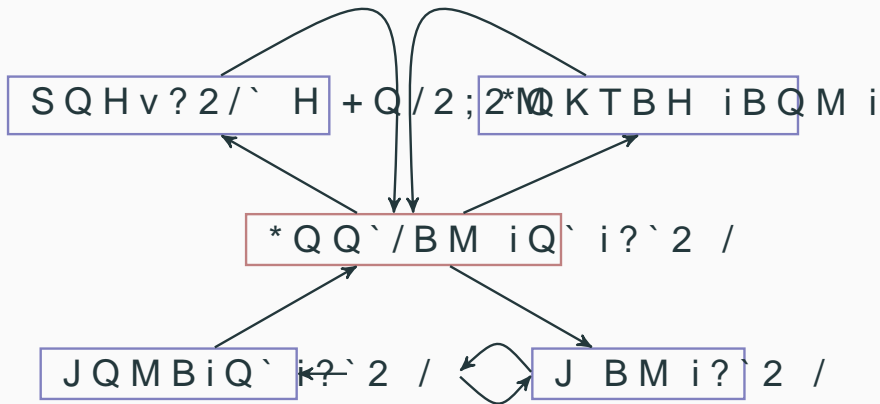
$U_2 + QMbi^m + iBQM \quad Q7 \quad i^2 \quad Ai^2 \quad iBQM \quad .QK \quad BM$

$$\begin{array}{l} S^2 BK ;2 \quad Q7 \\ i^2 + QKTmi^2 / \\ TQHv^2 / \end{array} \longrightarrow$$

$$\begin{array}{l} S^2 + BbBQM \quad TQHv^2 / \\ U_2 / 4 ? B ; ? - "Hm24HQRv \end{array}$$

$$\begin{array}{l} TTHv \quad i^2 \quad ^2 bi^B + \\ iQ^2 + ? \quad TQHv^2 / \end{array}$$

6`QK SQHv?2/` H _2T`2b2Mi iBQM " +F iQ

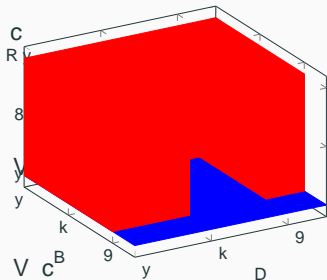


* Q/2 qBi? * GQQ:

a K2 +Q/2 ;2M2` i2/ rBi? * GQQ:

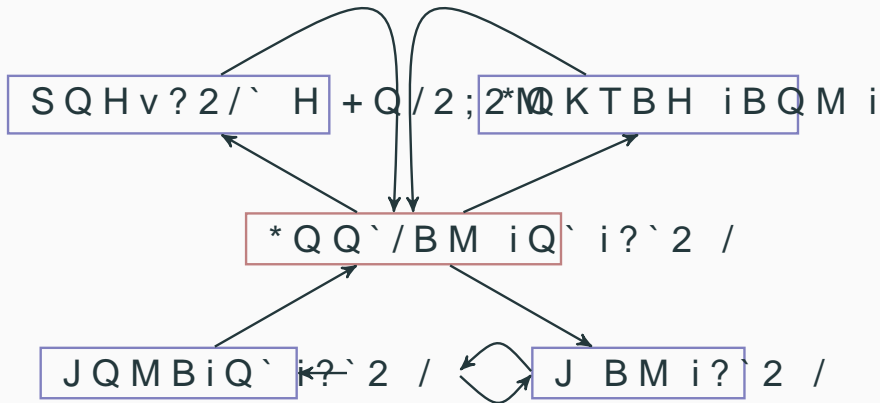
R 7 Q \ U B 4ycBI48cBYYV
k 7 Q \ U D 4ycDI48cDYYV
j +QKTmiUBQB - D - X X X V c
9 7 Q \ U F 4RcFI4RycFYYV &
8 7 Q \ U B 4ycBI4kcBYYV
e 7 Q \ U D 4ycDI48cDYYV
d +QKTmiUBQB - D - X X X V c
3 7 Q \ U B 4jcBI49cBYYV &
N 7 Q \ U D 4ycDI4RcDYYV
Ry +QKTmiUBQB - D - X X X V c
RR +QKTmiUBQB - 8 - X X X V c
Rk
Rj

Ai2` iBQM /QK BM



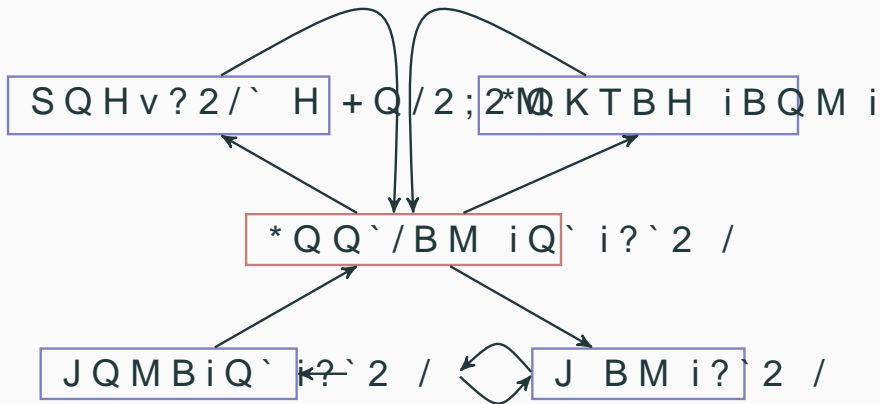
U_2/ 4 ?B;? - "Hm2 4 HQ

:2M2` i2 i?2 / TiBp2 *Q/2



*QKTBH iBQM mbBM; h** M/ :**k@jP

* $Q/2$ BMD $2+iBQM$



$$R \times M i \cdot Q / m + i B Q M$$

$$k X / T i B p 2 J 2 b ? _ 2 \} M 2 K 2 M i$$

$$j X / T i B p 2 * Q / 2 _ 2 \} M 2 K 2 M i$$

$$9 X * b 2 b i m / v , 1 m H 2 \cdot B M \sim m B / b B K m H i B Q M$$

$$8 X * Q M + H m b B Q M$$

* $b^2 b_{im}/v, 1mH^2`B M \sim mB/ bBKmH iBQM$

$\zeta aBKmH iBQM Q7 \sim mB/$
 $Qp^2` iBK^2$

$\zeta :`B/ \# b^2/ bBKmH iBQ$

$\zeta 6HmB/ /2MbBiv$

$\zeta 6HmB/ p^2HQ+Biv$

$\zeta h?^2 bQH p^2` +QM p^2`;2$
 $Bi^2` iP^2 H;Q` Bi?K$

$\zeta >B;?^2` /2MbBiv `^2[m$

$bQH p^2` Bi^2` iBQM b$

$:` T?B+ H `^2T`^2b^2Mi iBQM Q7$

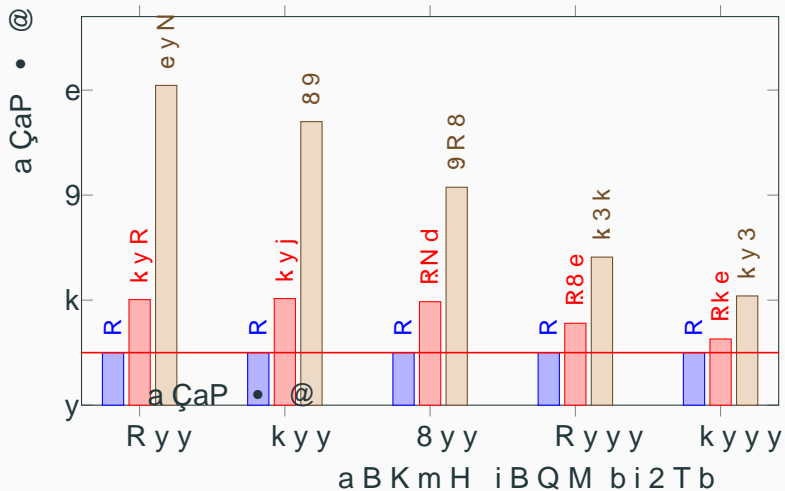
$i?^2 bBKmH iBQM \sim mB/ /2MbBiv$

$7Q` i^2bi bBKmH iBQM$

GBp2 / 2KQ 5

q? i + QmH / TQbbB#Hv ; Q r` Q

aBKmH iBQM bT22/mT



S`2+BbBQM 2``Q`

h?2 ~mB/ /2MbBiv p Hm2` M;2b 7`QK y iQ ky

aBK bi	2J2 M 2` ` Q` t 2` ` Q`	r p H	m_2 r W i Q i	H
Ryy	yXRjW	yX9RW	yXyyk	yXyRW
kyy	yXR8W	RRXR9W	yXyy9	yXykW
8yy	yXjeW	k8X9RW	yXyk	yXRW
Ryyy	RXeyW	jyX83W	yXy9	yXkW
kyyy	jXdyW	88X9W	yXy3	yX9W

* Q M + H m b B Q M

Ç L2r + QKT BH2` i2+? MB[m2 iQ ; 2M2` i2 / T

Ç miQK iB+ rBi? mb2` BMTmi BM7Q`K iBQM

Ç 1 bviQ mb2 M/ F22Tbi?2 +Q/2 bBKTH2

Ç bvK2i`B+ i?`2 /BM; KQ/2H

Ç 6mim`2 rQ`F

Ç miQK iB+ ;`B/ imMBM;

Ç S`QpB/2 rviQ 2Mbm`2 +2`i BM T`2+BbB

Ç 1tTHQ`2 Qi?2` TT`QtBK iBQM i2+? MB[m2

Z m 2 b i B Q M b \

Ç aBKmH iBQM,

?iiTb,ff+QKKQMbXrBFBK2/B XQ`;frBFBf6
nbBKmH i2/nT`BKQ`/B Hn; H tv-n/2MbBi

Ç * i,?iiTb,ff+QKKQMbXrBFBK2/B XQ`;frBF

62HBbnbBHp2bi`BbnbBHp2bi`BbnbK HHn
/2+`2 b2nQ7n[m HBivXTM;

Ç J_,?iiTb,ff+QKKQMbXrBFBK2/B XQ`;frB

K`;`B/BK;XDT;