

30 Cz O 2017P294 -Lz, 2

± v - ® › Ü 2 2018 \$ P
2 ù ú è Ž 2

5 #, D/t P < c [H ? . ' + ^ , - F P E y 3 i Q] 73 A x 1 I) a 1 v

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b H & i N - ? • E 4 Y Q] 73 A x 1 I p 3 1 5 . J I = Q] 73 A x 1 I Ê

+ ^ E ¥ , , J = Q] 73 A x 1 I) a 1 . J 1 • 3 ` Q æ K 4 ' ¶ e i G μ , §

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, ° 19 ` N - \$ > 2017 a , ^ 3 ` ¶ e i G (e P 5 ` . J 0 - 1 x , °

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5-10 ` N - \$, ¿ È 3 5 C o q , 1 í p 5000 = y > 7 P (« j

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N - \$ + i Û 5 6 ? = • Â 4 Y = N Í ' , 1.1 μ ° . J 0 - i G F > , > š

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3 a > + i Û N - \$, ° . J 0 - » i N ± # ë - B Â 4 Y = N Í A = • v M , ° ž G

» i Â 69 n = = > N - \$ A A ô B 4 N Í ! Õ O @ C C » E y 5 ` , " ` B 4 N Í

ø . J < f Õ O @ C C » E y 5 ` > N - \$ A ô 1 C N - \$ C U C Y ð , N - \$ c "

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αAú f5 Ò.α Ð D5# e 7 ï E >

1. Q J73Ax1Í)å¹.J

1.1 Ax1Í C x L,° W Á %31 ì°´ 0.v f"õ2± µ

p ÞF Q J73Ax1Í)å¹F >, Â µ+^ W E ^ % 5±5 — , A
,°Eϕ , ùF Ax1Í C x73 Ñ,°α D } ,.J0¬Q J73Ax1Í C x
L,° W Á Â %315 ° , pQ J73Ax1Í C x P,° ‹ – Ð* < A ð Â ¶
e 0.v >

.J0¬ » ï Æ. J0¬ µ 5±5)å¹ A < 9Cz\$Æ´ Ax1Í Cz\$Æ = Ž Þ
Cz\$Æ = Ê+^E¥ , 1•µ C x ~ E > ž/p,° ï# , Ax1Í C x L,° %31
ì° , Õ ÁPÂA÷315 > - % ; " ÆQ J73Ax1Í C x L,° W Á
D %315 ° , C x Cz\$Æ)æ DAõL\$ W E , P1x* < A C x LCz\$Æ
,°1x* < W Á D1x* < p l , C x Ú l p l , C x LCz\$Æ,° µ+^ ï# =
µ+^ AxH Â AxCo1OE+›1• > ^ µ ?4õ / 4õ5±5 — , A , Ó Ž 3 ï
Q J73Ax1Í)å¹ , ~ F Õ ÁPÂA÷315 >

69 n = = Æ Õ ÁPÂA÷315 - ? ® Á,° È6Š5± C x1% Â Ø m1%
~7 , Ø m1% e 701 ÞAô = , ^ 3 ïQ J73Ax1Í)å¹ cG 5" , Ô
L{PÂA÷ e 7,° Ê+^E¥ , C G Ä 20 ` , ¬ ~ F © ÄQ J73Ax1Í C x
L W Á,° . Aü Ý y >

1.2 Q J73Ax1Í<• ! α0°L*´ 0.v f"õ2± µ

J¾ /] ÁAx1ÍL\$NÎ / ! α0°L* , °?·"x , ^Q J73Ax1Í)å¹ c
~ F µ , ° ! α § á ,.J0¬D , ° <• ! α0°L* W Á = %315 °

<• !α0°L*,°1x*<=AõL\$1•©Kd ¶ e ,.J -. Ê,°<• !
α0°L*315 , ^ 3 ìQ]73Ax1Í)å¹G 5" >
.J0¬ » ï ÆEJ¾/Q]73Ax1Í)å¹cD <™,° Ž ÞCz\$Æ ,.J
0¬°0 D b f !α0°L* 68* = J73 %M– f5 6AõL\$ D1x*<,°<•
!α0°L* ¶ e > - %; " Æ<• !α0°L*,° W Á D>ž/p ï# , <
™ Ž ÞCz\$Æ,°6• > ï# , <• !α0°L*,°B-"x D <Gf = !α p
H <=LÊ/ñ D ĵ ž1x*< , <• !α0°L* c !α,° %M– ĵ ž01 Þ1• ,
p ^ 3 ìQ]73Ax1Í)å¹c0 1 <• !α0°L* Ñ ¶ e !ë >
69 n == Æ ~ F Âª,°E¥ ,315 , DQ]73Ax1Í)å¹E¥ , /
Û , ¬ %>á Ê+^AõL\$, ^ 3 ìQ]73Ax1Í)å¹cG 5" ,PÂA÷<•
!α0°L* f*<<9 C G Ä Ê `&ï ,?ú WEô f

´ 2 µ 0 Ä Ê+^,° ž vCz\$Æ N LB9 Ü >5 > V5 ,° 0 ÄAx1Í
?ú W ÂF >, ,L*,°' PB9 Ü ï# , ~ F 0 Ä Ê+^(-],° Ô+^,° ž
vCz\$Æ N LB9 Ü ï# >

´ 3 µ } 3 ïQ]73Ax1Í)â¹ ħ ž LÒ >H &ïJ¾ /+^ m Ê
+^,°!æ ħ ž, @ é Ê+^!æ ^)â¹ c,° VEEÉ = Ž Þ DAõL\$ ħ ž >

´ 4 µ)â¹!æ VEEÉ]73 } > Q)â¹ 5 &ïL*!æ VEEÉ,°
]73 Â %M-], o°)â¹,° C xC^H Â+^ m %oPÂ >

69 n = = Æ p 3 ïQ]73Ax1Í)â¹ Ñ C x LF :[,°1x*< e

Ç © & , ~ F73Kµ U0i Ð %M-F >,,° 0.vAô ó Ç Â F)â¹,°Cz\$Æ

}4Ý ,8,&ï!Eô 17 ` @ ,6•>,°Ax1ÍCz\$Æ 500PFlops @ , Ž

þCz\$Æ @ , • G u" !æE¥ m -E¥ !ñ "€5µà\$< # ñ5 @ "ÀQ°D D ;€6•´

x©&, Ñ 50` @Q]73Ax1Í•6è D ÔPÂ,° Ê+^E¥, , -r.α

E¥,°%+^½> C x Ä 2000` @]œ+U L.J0-+U+^m, " a

Ñ 2000 = CPU nE, fCop, >

2. Q]73Ax1Í Ê+^E¥, .J

2.1 0 Ä ð M=\$Æ,°\$G f A5 ° Ø#•E¥,315 'H]§]

©Kd¶ e D Ê+^p992± μ

.J0- » ïÆ Ê / 3ì < / \$'f Ø#•,°H]M6"x, *5