

University of North Georgia
Mathematics Tournament
April 1, 2017

Solutions for the Afternoon Team Competition

5RXQG

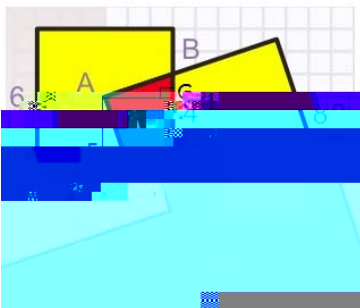
)URP WKH ILJ[√]XUH E~~M~~ORZ 6LPSOLI\|LQJ J~~K~~Y~~X~~HVx DQG WKHQ
x DQG

5RXQG

\$αφ

,I \RX QHHG WKLV GRFXPHQW LQ DQRW#XHQJIRGRDRU ISDGHVH

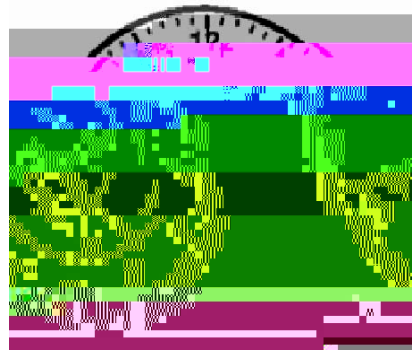
ORJ yORzJ ORJ ORJ
ORJ zORJx ORJ ORJ
ORJ xORJy ORJ ORJ
\$GGLQJ DOO WKUHHORJTXDWRJQV ORJJHWORJ ORJ ORJ
7KLV VLPSONIDRyH WRORJDQG WKHQ ~



,I \RX QHHG WKLV B B FXPUPQW LQDORW#X QD LQGRLQV X DOO

$x y x y^a$ $0\frac{1}{4}$
 $x y x y x y xy$
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 $x y x y xy \frac{\$}{x y \textcircled{c}}$ ~ .
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 $x y \frac{\text{\textasciitilde}\$}{x y \textcircled{c}}$.
 \textasciitilde^1
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 6R IURP DER $x y H y$ $\frac{\$}{x y \textcircled{c}}$ $x y \frac{\cdot}{\text{\textasciitilde}^1}$

5RXQG



5RXQG

7KH DQJODF DWHVC VRK HW KH QWPHD OHS HFFWL QBRHDJ IZL WQ FHHUWKLF D
SRAQ WKLFK LV BQ FX QH QGRHO LDKLGF IS RL VQRVQ DVK HF \OW QW HU DUH
FRLQFLGHQW ZKHHQG DB VBA QFKH UH WKHV KVD B B DVKHF OHDOJWM U DG
F\OLQGSHUFWWM O\

6RT r / T6LPSOLI\IRQJ JLX HDVQG $\frac{R}{r}$ § T :KH'Q
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