

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2008
ROUND 4 ALG 1: FRACTIONS & MIXED NUMBERS

******* NO CALCULATORS ON THIS ROUND *******

ANSWERS

A) increase decrease by a factor of ____

B) ____ AM PM on ____

C) _____

A) Given: $t = \pi \sqrt{\frac{L}{g}}$

If L is multiplied by 100 and g is divided by 4,
what is the effect on t ? Circle the correct word and fill in the blank.

B) Four bells A , B , C and D ring regularly with the following schedules:

A every 24 minutes

B every 30 minutes

C every hour and 40 minutes

D every 6 hours and 15 minutes.

At 3:30 PM on Thursday, these four bells rang simultaneously.

Specify the day of the week and the time of day when these bells will next ring simultaneously. Circle AM or PM and fill in the blanks.

C) Given: $1 + \frac{rR}{f} = \frac{r}{F}$

If $r = 48$ and $\frac{f}{F} = \frac{12}{5}$, determine all positive integer values of F for which R will also be a positive integer.