

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2013
ROUND 6 ALG 1: ANYTHING**

ANSWERS

A) _____ ° C

B) _____

C) _____

- A) At -40° , the Fahrenheit and Centigrade thermometers register the same temperature. Above that temperature, the absolute value of the Fahrenheit temperature is greater than the absolute value of the Centigrade temperature.

At what Centigrade temperature does a Fahrenheit thermometer register a temperature exactly twice that of a Centigrade thermometer?

Note: An equation relating equivalent Fahrenheit and Celsius temperatures is $C = \frac{5}{9}(F - 32)$.

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- B) Compute the minimum value of $\frac{10}{2x-1}$, if $3x^2 + 2x = 1$.

- C) The number of positive integer solutions to $|2x - c| < 10$ is exactly twice the number of negative integer solutions for exactly one positive integer constant c . Compute c .