
MATHCOUNTS®

2015
■ Chapter Competition ■
Target Round
Problems 7 & 8

Name _____

School _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

Total Correct	Scorer's Initials

Raytheon

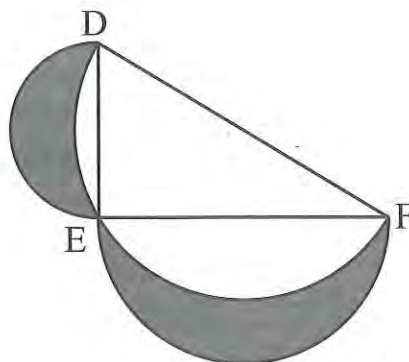
2015 MATHCOUNTS
National Competition Sponsor

NATIONAL SPONSORS
Raytheon Company
Northrop Grumman Foundation
U.S. Department of Defense
National Society of Professional Engineers
Phillips 66
Texas Instruments Incorporated
3Mgives
CNA Foundation
Art of Problem Solving
NextThought

FOUNDING SPONSORS: National Society of Professional Engineers, National Council of Teachers of Mathematics and CNA Foundation

Copyright MATHCOUNTS, Inc. 2014. All rights reserved.

7. _____ m² Right triangle DEF, with sides of integer length, has a perimeter of 40 m. Semicircles are drawn with diameter DE and diameter EF, as shown. If arc DEF is a semicircle, what is the total area of the shaded regions?



8. _____ If f is a function such that $f(x) + \frac{1}{x} \cdot f\left(-\frac{1}{x}\right) = 3$, what is the value of $f(2)$? Express your answer as a common fraction.