

---

# MATHCOUNTS®

---

2017  
■ Chapter Competition ■  
Target Round  
Problems 7 & 8

0
1
2
3
4
5
6
7
8
9

---

Name \_\_\_\_\_

School \_\_\_\_\_

**DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.**

---

Problem 7	Problem 8	Scorer's Initials



**2017 MATHCOUNTS**  
National Competition Sponsor

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

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

Copyright MATHCOUNTS, Inc. 2016. All rights reserved.

7. \_\_\_\_\_ ft/s Three-fifths of the way up a hill, Jack and Jill realized that they had forgotten their bucket. Jill continued up the hill, while Jack went back down the hill to get the bucket. Two minutes after turning back, Jack reached the bottom of the hill at the exact same time that Jill reached the top. If the total distance from the bottom to the top of the hill is 1260 feet, what is the absolute difference in Jack's downhill speed and Jill's uphill speed, in feet per second? Express your answer as a decimal to the nearest tenth.

8. \_\_\_\_\_ Twenty-five chips, each marked with a different integer from 1 through 25, are placed in a jar. A student draws a chip from the jar and tells everyone the number. The chip is then returned to the jar. Nine more students do the same thing. What is the probability that at least two of the ten students draw the same chip? Express your answer as a decimal to the nearest hundredth.