PEP Grade 5 Math — Unit 8: Math in Action: Finding the Defective Item · Unit Test (Basic)

PEP · Grade 5 · Term 2 · Mathematics · Unit Test · Basic

AI-generated practice paper · original study aid, not an official examination paper · 40 questions · 100 points

Name: _____ Date: _____ Score: _____

Answer all questions. This paper is worth 100 points. Show your working where appropriate.

I. Multiple Choice

1. You have 3 identical-looking coins, one of which is lighter than the others. Using a balance scale, what is the minimum number of weighings needed to guarantee finding the lighter coin?
   A. 1
   B. 2
   C. 3
   D. 4

2. If you have 9 coins and one is heavier than the rest, what is the smallest number of weighings required to identify the heavy coin using a balance scale?
   A. 1
   B. 2
   C. 3
   D. 4

3. You have 12 coins, one of which is counterfeit (either heavier or lighter). What is the minimum number of weighings needed to find the counterfeit coin and determine if it is heavier or lighter?
   A. 2
   B. 3
   C. 4
   D. 5

4. In a group of 5 coins, one is lighter. How many different ways can you choose two coins to weigh first on a balance scale?
   A. 5
   B. 8
   C. 10
   D. 15

5. If you divide 9 coins into three groups of 3, and after one weighing the left side is heavier, what can you conclude about the counterfeit coin?
   A. It is in the right group and lighter
   B. It is in the left group and heavier
   C. It is in the middle group and heavier
   D. It could be in any group but we need another weighing

6. How many coins can you check with just 2 weighings if one is either heavier or lighter?
   A. 6
   B. 7
   C. 8
   D. 9

7. You have 8 coins, one of which is counterfeit and lighter. You use a balance scale. After placing 3 vs 3, the left side is lighter. Where is the counterfeit coin?
   A. In the left group
   B. In the right group
   C. In the remaining group
   D. Impossible to tell

8. Which strategy best reduces uncertainty when searching for a counterfeit coin?