

Problem Set 6

Problem 1

$a^5 = 9,84658,04768$, where a is an integer, find a .

Problem 2

$a^5 = 1886,65362,36032$, where a is an integer. Find a .

Problem 3

$a^5 = 92721,65023,65625$, where a is an integer. Find a .

Problem 4

$a^5 = 11964,33987,33024$, where a is an integer. Find a .

Problem 5

Fill in the table below.

a last digit of a $a \bmod 9$	a^3 last digit of a^3	$a^3 \bmod 9$
9		
8		
7		
6		
5		
4		
3		
2		
1		
0		

Use the table to find the cube root a of $a^3 = 146,363,183$. Note there will always be ambiguity in determining $a \bmod 9$, but use the approach in Step 3 of Example 2 in the lecture. Check your answer by raising it to the 5th power.