

Problem Solving: Look for a Pattern

Mr. Nagpi works in a machine shop. In the shop, the drill bits are kept in a cabinet with drawers. The drawers are marked with the diameter of the bits as shown on the right. Some of the labels are missing. Help Mr. Nagpi complete the drawer labels.

Drill Bits				
0.10 in.	0.12 in.	0.14 in.	0.16 in.	0.18 in.
0.20 in.	0.22 in.	0.24 in.	0.26 in.	0.28 in.
0.30 in.	0.32 in.	0.34 in.		

Read and Understand

What do you know?

What are you trying to find?

Some drawers are labeled with decimals.

A way to find the values of the missing labels

Plan and Solve

Find a pattern for the decimals.

- Look for a pattern to the change in the tenth-values across a row or down a column.
 - Look for a pattern to the change in the hundredth-values across a row or down a column.
 - Use the patterns to complete the table.
- The tenth-values are not increasing across a row. They are increasing by 1 down a column.
 - The hundredth-values are increasing by 2 across a row. They are not increasing down a column.
 - The missing labels in the third row are 0.36 in. and 0.38 in.

Find the pattern in the table. Then fill in the missing values in the table.

0.20	0.21	0.22	0.23	0.24
0.50	0.51	0.52	0.53	
0.80	0.81	0.82		

Name _____

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Determine the pattern and then complete the grids.

1.

0.87		0.89	
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2.

0.12
0.22

3.

0.22	0.23		
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4.

0.56
0.76

5. In a list of numbers, the pattern increases by 0.001 as you move to the right. If the third number in the list is 0.064, what is the first number in the list? Explain how you know.

6. If 5 school buses arrive, each carrying exactly 42 passengers, which expression would you use to show how many people in all arrived on the school buses?

A $42 + 5$ **B** $42 - 5$ **C** 42×5 **D** $42 \div 5$

7. Mishell arranged her coins in the following pattern: \$0.27, \$0.29, \$0.31, \$0.33. Explain what her pattern is, and then tell what the next amount of coins would be.
