Divisibility rules practice

Grade 6 Factoring Worksheet

A. For each number on the left, place a check mark (✓) under the numbers it is divisible by. Use the divisibility rules on page 2.

Number	2	3	5	6	9	10
1) **78**						
2) **81**						
3) **102**						
4) **220**						
5) **261**						
6) **450**						
7) **864**						
8) **305**						
9) **441**						
10) **618**						

B. Write your answers in the spaces provided.

1) Write a 3-digit number divisible by 2 and 5. _____
2) Write a 3-digit number divisible by 3 and 9. _____
3) Write a number less than 1,000 divisible by 2, 3, and 10. _____
4) Explain why 540 is divisible by 6.

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Divisibility Rules

Divisible by	Rule
2	A number is divisible by 2 if its last digit is 0, 2, 4, 6, or 8.
3	A number is divisible by 3 if the sum of its digits is divisible by 3.
4	A number is divisible by 4 if its last two digits are divisible by 4.
5	A number is divisible by 5 if its last digit is 0 or 5.
6	A number is divisible by 6 if it is divisible by both 2 and 3.
7	A number is divisible by 7 if the difference between twice the last digit and the remaining number is 0 or a multiple of 7.
8	A number is divisible by 8 if its last three digits are divisible by 8.
9	A number is divisible by 9 if the sum of its digits is divisible by 9.
10	A number is divisible by 10 if its last digit is 0.
11	A number is divisible by 11 if the difference between the sums of alternating digits is 0 or a multiple of 11.
12	A number is divisible by 12 if it is divisible by both 3 and 4.

Answers

Number	2	3	5	6	9	10
1) **78**	✓	✓		✓		
2) **81**		✓			✓	
3) **102**	✓	✓		✓		
4) **220**	✓		✓			✓
5) **261**		✓			✓	
6) **450**	✓	✓	✓	✓	✓	✓
7) **864**	✓	✓		✓		
8) **305**			✓			
9) **441**		✓			✓	
10) **618**	✓	✓		✓		

1) Write a 3-digit number divisible by 2 and 5. 120 (Answers may vary)
2) Write a 3-digit number divisible by 3 and 9. 117 (Answers may vary)
3) Write a number less than 1,000 divisible by 2, 3, and 10. 180 (Answers may vary)
4) Explain why 540 is divisible by 6.
540 is divisible by 6 because it is divisible by both 2 and 3. It is even (ends in 0), so it is divisible by 2. The sum of its digits (5 + 4 + 0 = 9) is divisible by 3, so it is also divisible by 3. Since it is divisible by both 2 and 3, it is divisible by 6.