MATHCOUNTS® Minis
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Try these problems before watching the lesson.

1. Using each of the digits 1, 2, 5, and 7 once, what is the largest four-digit number you can create which is divisible by 4?
2. What is the value of the digit K that will make the number $481{,}5K6$ divisible by $2, 3, 4$ and 9?
3. There are 24 four-digit positive integers that can be formed using each of the digits $2, 3, 7, 9$ exactly once. How many of these 24 integers are prime?
4. Find a positive integer that is divisible by 18 and whose cube root is a number between 8 and 8.1.

First Problem: What four-digit number has tens digit 2 and units digit 8, is a multiple of 16, and when its digits are reversed the result is also a multiple of 16?

Second Problem: The product of three consecutive integers is 157,410. What is their sum?

Follow-up Problems

5. Three teenagers have integer ages x, y, and z, in years. If the product of their ages is 4,590 and they each have a different age, what is the sum of the three ages, in years?

6. A four-digit integer m and the four-digit integer obtained by reversing the order of the digits of m are both divisible by 45. If m is divisible by 7, what is the greatest possible value of m?

7. What is the smallest positive five-digit integer, with all different digits, that is divisible by each of its non-zero digits? Note that one of the digits of the original integer may be a zero.

8. What is the smallest four-digit whole number divisible by 9 which has two even and two odd digits?

Share Your Thoughts

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