

Math 6E HW4 **Enrichment and Extension****Divisibility by Seven**

To check a three-digit number for divisibility by seven, multiply the last digit by two and subtract the result from the remaining digits of the number. If the answer is divisible by seven, then the original number is also divisible by seven.

**Example:** Check 693 for divisibility by seven.

Multiply three by two and then subtract from 69. If the resulting number is divisible by seven, then 693 is divisible by seven.

$$3 \times 2 = 6$$

Multiply 3 and 2.

$$69 - 6 = 63$$

Subtract 6 from 69.

$$63 \div 7 = 9$$

Divide 63 by 7.

Because 63 is divisible by 7, 693 is also divisible by 7.

**Determine if the number is divisible by seven.**

1. 604

2. 651

3. 460

4. 235

5. 343

6. 427

7. 178

8. 833

9. 280

10. Write a rule to determine if a three-digit number is divisible by seven and 10.
11. How is the divisibility rule for 7 more complicated than the rules for 2, 3, 5, and 10?