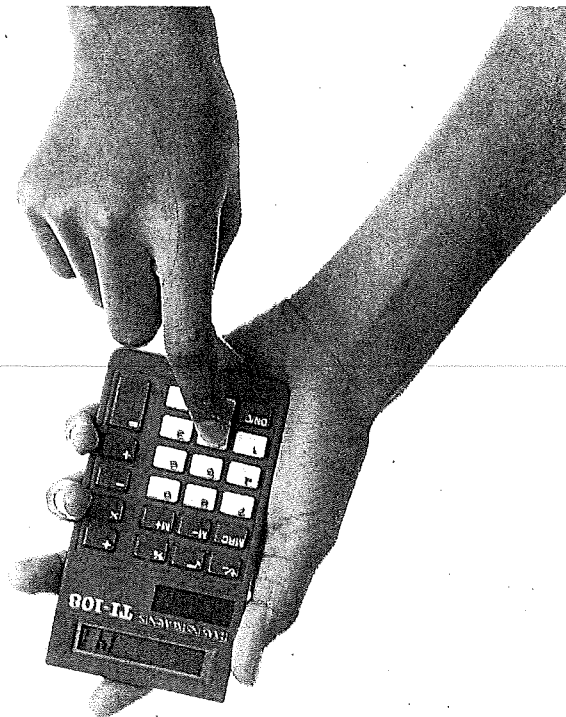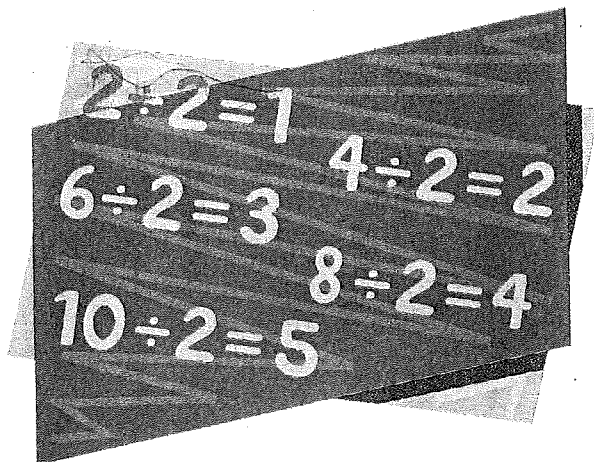## Divisibility Tests

If one number divided by a second number gives a remainder of zero, then the first number is **divisible** by the second.

Even numbers, which end in 0, 2, 4, 6, or 8, are all divisible by 2. So, when we check whether a number is even, we carry out a **divisibility test** for 2.

$2 \div 2 = 1$
$6 \div 2 = 3$
$4 \div 2 = 2$
$8 \div 2 = 4$
$10 \div 2 = 5$

Activity ❶

1. Use your calculator to find which of the following are divisible by 3.

630   1701   960   1412   954
     2354   4251   763   885

2. Add the digits in each number that is divisible by 3.

3. What number are all these sums divisible by?

4. Write the divisibility test for 3.

5. Use your test to predict whether each of the following is divisible by 3.

324   69   136   4131   102
6313   62 160   5241   28 312   7038

6. Write 6 numbers that are divisible by 3. Do not use numbers from this page.

Activity ❷

1. Use your calculator to find which of the following are divisible by 4.

324   630   7168   3354   976
     894   6528   480   2616

2. In each number divisible by 4, record the pair of digits in the ones and tens places.

3. What number are all these pairs of digits divisible by?

4. Write the divisibility test for 4.

5. Use your test to predict whether each of the following is divisible by 4.

84   248   742   6082   35 636

6. Write 6 numbers that are divisible by 4. Do not use numbers from this page.

7. Are all numbers that are divisible by 2 also divisible by 4? If not, give an example. Explain your answer.

8. Are all numbers that are divisible by 4 also divisible by 2? If not, give an example. Explain your answer.

Activity 3

1. Use your calculator to find which of the following are divisible by 6.

876   789   4230   888   8433

9243   936   6732   543

2. Use the divisibility tests for 2 and 3 to find the numbers above that are divisible by both 2 and 3. What is the pattern?

3. Write the divisibility test for 6.

4. Use your test to predict whether each of the following is divisible by 6.

84   856   124   7614   2154

5166   23 742   4914   25 623   7254

5. Write 4 numbers that are divisible by 6. Do not use numbers from this page.

Activity 4

1. Use your calculator to find which of the following are divisible by 8.

168   124   128

2168   3124   4128

42 168   53 124   74 128

2. In each number divisible by 8, what are the digits in the ones, tens, and hundreds places?

3. What number are all these sets of three digits divisible by?

4. Write the divisibility test for 8.

5. Use your test to predict whether each of the following is divisible by 8.

604   1824   912   8436   5346

12 506   23 760   8724   24 266   3628

6. Write 4 numbers that are divisible by 8. Do not use numbers from this page.

Activity 5

1. Use your calculator to find which of the following are divisible by 9.

270   216   300   4572   2613

8424   711   409   6444

2. Add the digits in each number divisible by 9.

3. Write the divisibility test for 9.

4. Use your test to predict whether each of the following is divisible by 9.

108   234   181   315   5130

8361   70 245   702   2015   5409

5. Write 5 numbers that are divisible by 9. Do not use numbers from this page.