Do Now

- Try this magic number:

Think of a number from 1 to 9.

Multiply it by 9.

Add the digits of the 2-digit number.

Take away 5.

Multiply the number by itself.

Questions:

1) The answer is always ____ no matter what number you pick. Why?
2) Can you explain this magic answer by numerical (number) examples?
3) Can you write another magic number with steps that will always yield the same answer?

- Speedy multiplication & division

You learned that a number is divisible by 2 if it is even. Also,

You know a number is divisible by 3 if the sum of the digits adds up to a multiple of 3. Now try this:

To multiply a 2-digit number by 11, simply add the digits together and put the result in the middle of the 2-digits. Example: 32 x 11 = 352 since 3+2 = 5. Check your answer. Try 63 x 11 and 97 x 11. Check your answers.

Question:

1. Why does it work?
2. Can you think of a short cut for a 2-digit multiplication or division?

HOMEWORK PROBLEMS—Math Olympiad

1A *Time: 3 minutes*

What is the value of the following?

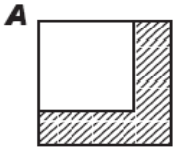
55 – 11 + 44 – 22 + 33 – 33 + 22 – 44 + 11 – 55

1B *Time: 5 minutes*

In all, how many two-digit prime numbers have 4 as one of their digits?

1C *Time: 5 minutes*

In the figure shown, two squares share corner A. The larger square has an area of 49 sq cm. The smaller square has an area of 25 sq cm. What is the perimeter of the shaded region, in cm?



1D *Time: 5 minutes*

Janine's number has three digits. One digit is a prime number. Another digit is a square number. The other digit is neither prime nor square. Her number is NOT divisible by 3. What is the greatest possible value of Janine's number?

1E *Time: 6 minutes*

In all, how many whole numbers between 400 and 600 are divisible by 9?

Objectives

- To explore the multiplication of whole numbers
- To explore the division of whole numbers (1-digit divisor)
- To explore the division of larger numbers (2-digit divisors)
- To review multiplication and division rules
- Review math olympiad problems

Page 57, Two-Digit Multipliers

Skip questions 2-4.

Large Rectangle:

5. 9x10 + 9x7
6. 10, 7, 10+7
7. Number, sum. Ex: 3(6) = 3(4+2) = 12 + 6
8. (1st row)24, (2nd row)120, (3rd row)160,(4th row) 800, (sum)1,104
9. 23 x 48, commutative.
10. 23x48 = 48x23 = 1,104.

$$\begin{array}{r} 23 \\ \times\ 48 \\ \hline 184 \\ +\ 920 \\ \hline 1{,}104 \end{array}$$

Page 61: Intro to Long Division

2. 108 / 6 = 108÷ 6
3. Area ÷ length
4. 60,120
5. Greater, less, between
6. 18 (suppose a grasshopper is 6 units long and it can jump 108 units)
7. A. divisor (also called factor of dividend if remainder = 0)

   b. quotient (also called factor of dividend if remainder = 0)

   c. dividend

page 62, continued

8. 6x18
9. quotient: 23, 1st row under dividend: 160, 1st difference: 24, row under difference: 24, remainder: 0
10. 23, 8x23 = 184
11. factor (if the remainder = 0)

Page 65, Two-digit divisors

2. Speed x time = distance
3. Factors
4. 140 hours. (1^{st} row under dividend)2500, (1^{st} difference)1000, (3^{rd} row under dividend) 1000, (remainder) 0
5. (140 hours/24 hours in a day) Quotient: 5, 1^{st} row under dividend: 120, remainder: 20

5a. 5, 20

5b. 5 days 20 hours

6. Remainder
7. remainder

Homework (Due 11/7)

Math III

- Finish pages 55 and pages 57 - 72 in the reader
- Finish Do Now:

Can you write another magic number with steps that will always yield the same answer?

Can you think of a short cut for a 2-digit multiplication or division?

NOTE:

Skip questions 2-4 on page 57. Review PowerPoint slides 4-7 before starting homework.

Math IV

- Finish page 55, pages 57-72 in the reader
- Finish 2-sided worksheet (found between p 70 & 71 in the reader) on dividing 2 and 3 digits by 2 digits and Check What you Learned
- Finish Do Now:

Can you write another magic number with steps that will always yield the same answer?

Can you think of a short cut for a 2-digit multiplication or division?

NOTE:

Skip questions 2-4 on page 57. Review PowerPoint slides 4-7 before starting homework.