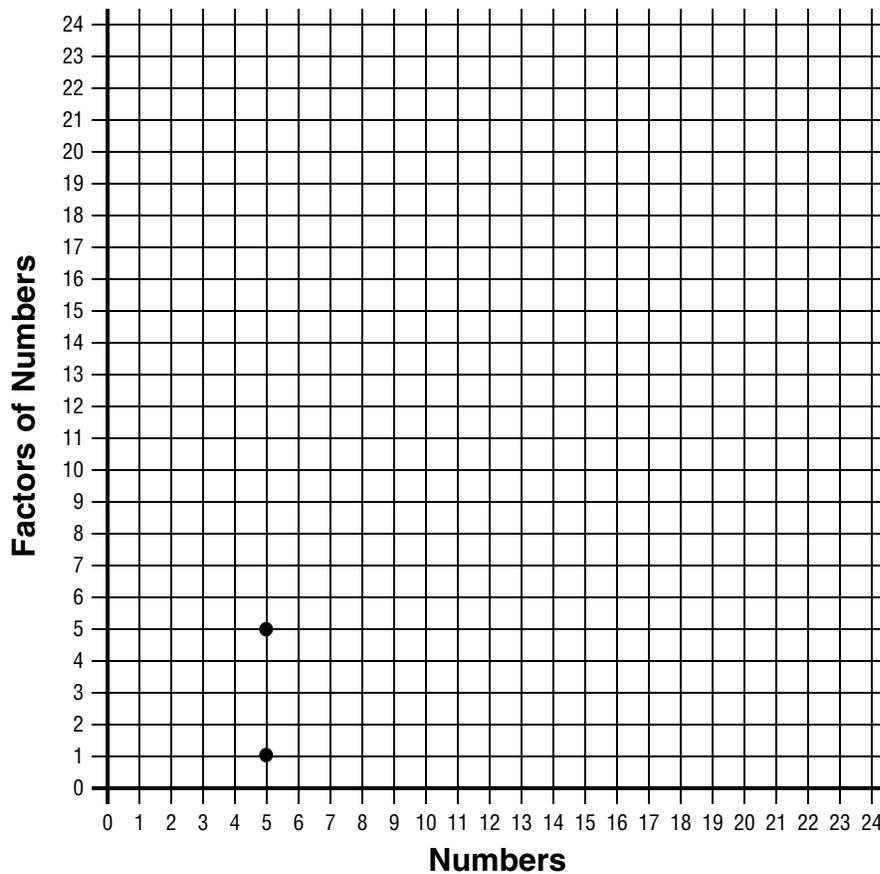


Name _____

It's a Fact!

Directions: Complete the problems below.

- Find all of the factors of these numbers.
 - 36 _____
 - 200 _____
- Find the factors that these two numbers have in common.
 - 36 and 60 _____
 - 64 and 24 _____
- Find the largest factor that these two numbers have in common.
 - 20 and 25 _____
 - 12 and 60 _____
 - 6 and 21 _____
 - 49 and 14 _____
- Mark a dot on the graph below where each of the numbers from 1–24 has a factor. The number 5 has been done for you. It is a prime number, so the only factors are 1 and 5.



- Which number has the most factors? _____
- Use the graph to find the common factors for 8, 12, and 16. _____
- Find the greatest common factor of 6, 12, and 24. _____

Name _____

We're Talking Telephone Numbers

Directions: Write your school's telephone number on the lines below.

_____ - _____



1. Find the sum of the digits. Is this number a multiple of 2, 4, 5, 10, or 100? Show your work here.

2. Write your home telephone number below. Find the sum of the digits in your home telephone number. Then, add it to the sum of the school's number. Is this new number a multiple of 2, 4, 5, 10, or 100? Show your work here.

3. John wrote his friend's telephone number on a scrap of paper, but it got torn and smudged. He knows that it was a seven-digit number and that it was a multiple of 2, 4, 5, 10, and 100. Can you suggest what the number was? _____



4. Find two other seven-digit telephone numbers that are multiples of 2, 4, 5, 10, and 100.

Challenge

Find a seven-digit telephone number where the sum of its digits is divisible by 2, 4, 5, and 10.

Using Simpler Numbers

Sometimes, a problem can seem too difficult to solve. If it has large numbers or complicated number concepts, you can use simpler numbers to help you understand what you need to do. Then, you'll be ready to tackle the harder problem!

Using simpler numbers can help in several ways. It can help you understand what operations you need to use to solve the problem. Try replacing the large numbers in the problem with smaller numbers. Then, solve the problem. If the answer makes sense for the smaller numbers, then you can use the same operations with the larger numbers.

Another way to use simpler numbers is to break down the problem into smaller parts. As you solve each part, keep track of your answers by drawing pictures or a table. Soon, you may see a pattern that will help you solve the big problem.

Problem: Painting Houses

The Problem

One day, 8 painters worked 12 hours each to finish painting half of the outside of a house. Only 4 of the painters plan to stay to finish the other half of the house. How long will it take the 4 painters to complete the other half?

Understanding the Problem

- *What do we know?*

Eight painters each worked 12 hours to paint half a house. And, 4 painters will finish painting the other half.

- *What do we need to find out?*

How long it will take for the 4 painters to complete the other half.

Planning and Communicating a Solution

- *Start with a Simpler Example*

If it takes 4 painters 4 hours to paint half of the outside of a house, how long will it take 2 painters to paint the other half?

First, find out how long it would take 1 painter to paint the outside of half the house alone. He would have to work 4 times longer to do the job of the original

4 painters, so he would take 16 hours.

$$4 \times 4 = 16 \text{ hours}$$

If 2 painters work on the other half, each will only have to work half as much time as 1 painter.

So, it would take them 8 hours to paint the other half of the house.

$$16 \div 2 = 8 \text{ hours}$$

- *Solve the Original Problem*

Start by working out how long it will take 1 painter to complete the work. We know that 8 painters take 12 hours, so 1 painter would have to work 8 times longer to do the job of 8 painters. So, 1 painter would take 96 hours.

$$8 \times 12 = 96 \text{ hours}$$

If 4 painters work on the other half, they would each have to work only $\frac{1}{4}$ as much time as 1 painter.

- *Do you see the answer?*

$$96 \div 4 = 24 \text{ hours}$$

They would each work 24 hours.

Reflecting and Generalizing

By starting with a simpler example, you are able to solve the problem more easily.

Name _____

Standardized Test Preparation 1

1 Ming fed 60% of the peanuts to her pet mouse. Write this percent as a fraction?

- (A) $\frac{3}{8}$
- (B) $\frac{6}{12}$
- (C) $\frac{3}{5}$
- (D) $\frac{60}{10}$

4 Which of these numbers is a multiple of 3, 6, and 9?

- (F) 24
- (G) 21
- (H) 12
- (J) 36

2 Rayna spent \$26.75 on a haircut and \$8.99 for a wash. How much did it cost altogether?

- (F) \$35.50
- (G) \$35.74
- (H) \$34.74
- (J) \$35.76

5 Find the difference between these two decimal numbers.

$$167.92 - 47.86 = \underline{\hspace{2cm}}$$

- (A) 89.32
- (B) 120.06
- (C) 145.64
- (D) 310.68

3 Which answer lists all of the factors of 16?

- (A) 1, 2, 8, 16
- (B) 1, 2, 4, 8
- (C) 1, 2, 4, 8, 10
- (D) 1, 2, 4, 8, 16

6 Pick one question from this test. Explain how and why you chose your answer.
