Are you ready for Beast Academy 4C?

Before beginning Beast Academy 4C, a student should understand some basic counting strategies, long division, divisibility rules, and the basics of fractions.

A student ready for Beast Academy 4C should be able to answer at least 13 of the 19 problems below correctly.

Step 1. The student should try to answer every question without a calculator and without help.

Step 2. Check the student's answers using the solutions at the end of this document.

Step 3. The student should be given a second chance on problems that he or she answered incorrectly.

1. How many even numbers are there from 6 to 54?

1. _____

$$6, 8, 10, \dots , 50, 52, 54$$

2. How many three-digit numbers have three odd digits?

2. _____

3. How many different arrangements of the letters in the word MATH are possible, including M-A-T-H?

3. _____

4. In a tennis tournament with 10 players, each player competes in exactly one match with every other player. How many matches are played?

4. _____

Compute each quotient.

5. $350,000 \div 500 =$ _____

6. $2,400,000 \div 8,000 =$ _____

7. $453,618 \div 9 =$ _____

8. $12,362,400 \div 6 =$ _____

9. $1,450 \div 5 =$ _____

10. $345 \div 15 =$ _____

First, estimate each quotient. Then, compute the quotient and remainder.

11. $198 \div 23$ is closest to: (circle one)

2   10   50   200

23) 198

quotient = _____

remainder = _____

12. $9,570 \div 47$ is closest to: (circle one)

2   10   50   200
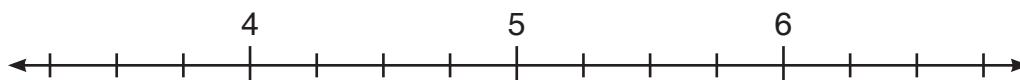
47) 9,570

quotient = _____

remainder = _____

13. Circle the numbers below that are divisible by 4, box the numbers that are divisible by 25, and underline the numbers that are divisible by 100.

187   275   300   360   535   600   625   708   1,000

14. Circle all of the numbers below that 2,375 is divisible by.

2   4   5   12   25   50   1,000

15. Label $\frac{17}{4}$ on the number line below as a mixed number.

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        4           5           6
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Place a <, >, or = to compare each pair of fractions below.

16. $\frac{3}{7} \bigcirc \frac{4}{7}$

17. $\frac{3}{11} \bigcirc \frac{3}{13}$

18. $\frac{5}{17} \bigcirc \frac{10}{37}$

19. Write each of the digits 1 through 8 exactly once in the grid below so that there are two digits in each row and two digits in each column. A number to the left of the grid gives the product of the two numbers in that row. Similarly, a number above the grid gives the product of the two numbers in that column.

	10	8		24
2				
24				
20				