

LAMC Beginners' Circle

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Fractions clinic

Problem 1 *Solve the following equation.*

$$(275 + 80 \div x) \div 4 = 70$$

Problem 2 *Prove that for any x and any $y, z \neq 0$,*

$$x \div \frac{y}{z} = x \times \frac{z}{y}$$

Problem 3 *Three one-gallon jars of milk cost p dollars. How much do five one-gallon jars of milk cost?*

Problem 4 *Seven tennis balls cost x dollars. How many tennis balls can you buy for y dollars?*

Problem 5 *Alice had x dollars. She has spent y dollars for ice-cream and the rest of her money to buy five identical candies. What was the price of one candy?*

Problem 6 *There are a apples in a basket which is $\frac{4}{7}$ of all the fruits in the basket. How many fruits are there in the basket?*

Problem 7 *The number of students in a school that take Spanish classes is s which is 65% of all the students in the school. How many students are there in the school?*

The notation $\lfloor x \rfloor$ reads as the *floor of x* . If x is an integer, then $\lfloor x \rfloor = x$. If x is not an integer, then $\lfloor x \rfloor$ is the biggest integer less than x . For example, $\lfloor 3.75 \rfloor = 3$.

The notation $\lceil x \rceil$ reads as the *ceiling of x* . If x is an integer, then $\lceil x \rceil = x$. If x is not an integer, then $\lceil x \rceil$ is the smallest integer greater than x . For example, $\lceil 3.75 \rceil = 4$.

Problem 8 Find the following values. Do not use the calculator!

1. $\left\lfloor \frac{1}{2} \right\rfloor =$

2. $\left\lceil \frac{1}{2} \right\rceil =$

3. $\left\lfloor 7\frac{3}{5} \right\rfloor =$

4. $\left\lceil 7\frac{3}{5} \right\rceil =$

$$5. \left\lfloor -2\frac{4}{11} \right\rfloor =$$

$$6. \left\lceil -2\frac{4}{11} \right\rceil =$$

$$7. \lfloor 4! \rfloor =$$

$$8. \lceil 4! \rceil =$$

$$9. \lfloor 2.999 \rfloor =$$

$$10. \lceil 2.999 \rceil =$$

$$11. \lfloor \sqrt{3} \rfloor =$$

12. $\lceil \sqrt{3} \rceil =$

13. $\lfloor \sqrt[3]{25} \rfloor =$

14. $\lceil \sqrt[3]{25} \rceil =$

Problem 9 *What is the largest integral number less than five?*

Problem 10 *What is the largest number less than five?*