

Math 5b, classwork 1.

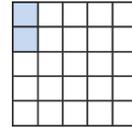


Review.

- a. *Prime numbers, prime factorization, LCM and GCD (GCF).*
- b. *Fractions and arithmetic operations with fractions.*
- c. *Negative numbers, absolute value of a number.*
- d. *Simple equations.*
- e. *Ratio and percent.*

Exercises.

1. Is it possible to cover a 5×5 area with 1×2 tiles?



2. Zoe multiplied four consecutive prime numbers and got a number ending in 0. What prime numbers did she multiply and what was her result?
3. Fill in the table. Find a pattern. What can you say about GCF, LCM and a product of two numbers

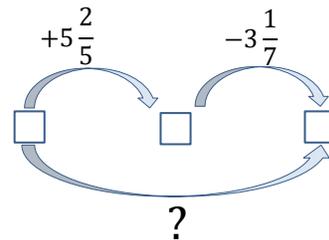
Numbers	Product	GCD	LCM
4 and 6	24	2	12
6 and 9			
5 and 7			
35 and 45			
16 and 18			
735 and 845	$735 \cdot 845$		

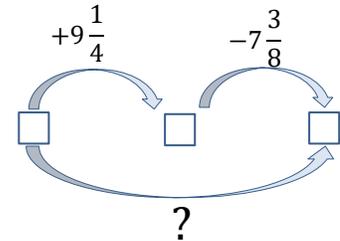
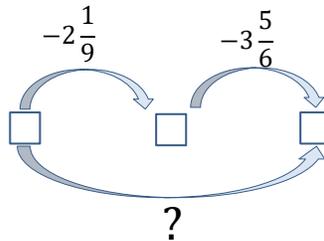
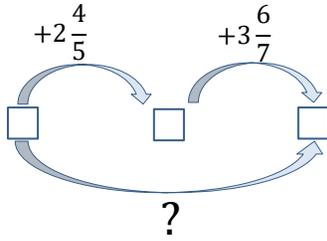
Can you explain what you noticed?

4. Write all the divisors of 56 in increasing order.
5. Write an arithmetic operation equivalent to the two given arithmetic operations.

Example:

$$\begin{aligned}
 +5\frac{2}{5} - 3\frac{1}{7} &= 5 + \frac{2}{5} - 3 - \frac{1}{7} = 2 + \frac{2}{5} - \frac{1}{7} = 2 + \frac{14}{35} - \frac{5}{35} \\
 &= 2 + \frac{9}{35} = 2\frac{9}{35}
 \end{aligned}$$



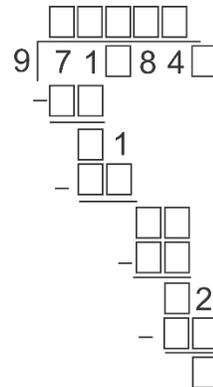


6. The sum of four consecutive natural numbers gives a remainder of 2 when divided by 4. Prove or disapprove it.

7. Fill in the empty cell in the table:

dividend	a	29		46	94
divisor	b	7	9		9
quotient	c	4	7	3	
remainder	r		5	1	4

$$a = b \cdot c + r$$



8. Fill in the missing digits:

9. The sum of two natural number is 45. First number gives a remainder of 4 when divided by 12, the second gives a remainder 5 when divided by 12. What are these numbers?

10. The sum of two natural number is 54. First number gives a remainder of 11 when divided by 17, the second gives a remainder 9 when divided by 17. What are these numbers?

11. The sum of two natural numbers is 48. The first number gives a remainder of 14 when divided by 19, the second gives a remainder 15 when divided by 19. What are these numbers?
12. Apples lose 85% of their weight when dried. How many dried apples can be made from 200 kg of fresh apples.
13. Mushrooms lose 90% of their weight when dried. How many fresh mushrooms did it take to get 5 kg of dried mushrooms.
14. Dry raspberries contain 12% water. From 50 kg of fresh raspberries, you can get 3 kg of dried raspberries. How much water does a fresh raspberry contain?

15. Evaluate:

$$20:33\frac{1}{3} - \frac{4\frac{7}{25} - 1.28}{0.75 + 3\frac{1}{4}} \cdot 0.2$$

16. Solve the equation:

$$|2x - 24| = 2$$

17. Evaluate:

$$2 - 3; \quad 2 - (-3); \quad 2 + (-3); \quad 55 - 67; \quad 25673 - 34512;$$

18. A car can go 320 miles on 12 gallons of gas. How far can the car take you with 1 gallon of gas?
19. Mr. Johns leaves \$ 275520 behind. According to his wish, the money should be divided between his two sons Peter and Victor in the ratio 3 : 2. Find the sum received by his sons.
20. A passenger in a train noticed that the oncoming cargo train passed in 9 seconds. What is the length of the cargo train, if its speed is 56 km/h and the speed of the passenger train is 84 km/h?

21. A train passenger noticed that an oncoming freight train passed in 9 seconds. What is the length of a freight train if its speed is 56 km/h and the speed of a passenger train is 84 km/h?
22. It takes two minutes to fry a hamburger on one side. Two hamburgers can be placed in a frying pan. What is the shortest time it takes to fry three hamburgers on both sides?
23. In 7 days, an elephant with a baby elephant eats 35 buckets of food. And in 10 days, an elephant with two baby elephants eats 60 buckets of the same food. How many buckets of food does an elephant eat per day ?