

Introduction to Algebra Summer Assignment # 1

There are 2000 jelly beans in a jar. The various colors of the jelly beans are red, orange, yellow, pink, white, green, blue, purple, and black. 30% of the jelly beans are red. One-tenth of the jelly beans are yellow. When the orange and blue jelly beans are combined, they make up one-fifth of the total number of jelly beans. 5% of the jelly beans are white. There are 50 pink jelly beans. When the black and red jelly beans are combined, they make up $\frac{7}{20}$ of the total number of jelly beans. When the pink and green jelly beans are combined, they make up 10% of the total number of jelly beans. There are four times as many orange jelly beans as there are blue ones.

1. How many red jelly beans are there? 1. _____
2. How many yellow jelly beans are there? 2. _____
3. What percentage of the jelly beans are black? 3. _____
4. What fraction of the jelly beans are white? 4. _____
5. What percentage of the jelly beans are pink? 5. _____
6. Which two colors have the exact same number of jelly beans? 6. _____
7. How many purple jelly beans are there, and what fraction of the total amount is this? 7. _____
8. Which two colors, when added together, equal the same amount as the red jelly beans? 8. _____
9. When you subtract the number of orange jelly beans from the number of purple jelly beans, that difference is equal to the number of which color jelly bean? 9. _____

More questions....

10. At my birthday party, the girls ate $3\frac{1}{2}$ pizzas and the boys ate $7\frac{1}{2}$ pizzas. How many pizzas were eaten at my party?

11. I bought $2\frac{1}{2}$ gallons of paint but I only used $\frac{2}{4}$ gallons of the paint. How much paint do I have left?

12. My recipe calls for $\frac{2}{3}$ cups of white flour and $2\frac{1}{5}$ cups of whole wheat flour. How much flour do I need in total for my recipe?

13. My dog is $5\frac{1}{2}$ years old. My cat is $4\frac{1}{4}$ years younger than my dog. How old is my cat?

14. During the pie eating contest my dad ate $5\frac{3}{4}$ pies and my mom ate $2\frac{1}{4}$ pies. How many pies did they eat altogether?

15. I need to drink $8\frac{2}{4}$ cups of water and $2\frac{1}{5}$ cups of milk every day. How much fluid do I have to drink?

Some fraction arithmetic practice ☺

$$16. \frac{6}{7} \times \frac{5}{3}$$

$$17. 4\frac{2}{5} \times \left(-3\frac{1}{3}\right)$$

$$18. 2\frac{2}{5} \div \left(-1\frac{1}{2}\right)$$

$$19. -\frac{8}{9} \div \left(-\frac{4}{3}\right)$$

$$20. \frac{5}{8} \times \left(-\frac{4}{15}\right)$$

Introduction to Algebra Summer Assignment # 2

Use your knowledge of integers to solve each problem.

1. The melting point of sodium is 98 degrees Celsius ($^{\circ}\text{C}$) and the melting point of zinc is 420°C . How much hotter is the melting point of zinc than that of sodium?

2. The average temperature of Venus is 480°C . The average temperature on Pluto is -230°C . How much warmer is Venus than Pluto?

3. Aluminum melts at 659°C and copper melts at 1083°C . What is the difference between the melting points of aluminum and copper?

4. The boiling point of water is 212 degrees Fahrenheit ($^{\circ}\text{F}$). Propane boils at about -44°F . How much hotter is the boiling point of water than that of propane?

5. Unleaded gas freezes around -150°F . Water freezes at 32°F . What is the difference between the two freezing points?

6. The temperature on Mercury varies from 400°C on the day side to -180°C on the dark side. What is the difference in temperature?

7. The freezing point of oxygen is -218.79°C and hydrogen is -252.8°C . A lab is lowering the temperature inside a fridge. Which freezes first? How much colder does it have to be for both to freeze?

8. The temperature in Montreal, Quebec at 3 pm is 1°C . The temperature drops to -9°C at 3 am. How many degrees did the temperature drop?

9. The moon experiences many extremes in temperature because it has no atmosphere. For example, on the side of the moon that the sun is shining on, the temperature can reach 260°F . On the dark side of the moon, it gets as cold as -280°F . How much is the drop in temperature from day to night?

10. Gold melts at 1946°F . Silver melts at 1762°F . How much cooler is the melting point of silver than gold?

11. The Punic Wars began in 264 B.C. and ended in 146 B.C. How long did the Punic Wars last?

12. In the Sahara Desert one day it was 136°F . In the Gobi Desert a temperature of -50°F was recorded. What is the difference between these two temperatures?

13. A submarine was situated 450 feet below sea level. If it descends 300 feet, what is its new position?

14. Lilly bought 4 pairs of blue jeans at \$32 each. How much money did she pay the clerk?

15. Roman Civilization began in 509 B.C. and ended in 476 A.D. How long did Roman Civilization last?

16. Maggie owes the candy store \$35. Each of 5 friends will help her pay off her debt. How much will each friend pay?

17. A submarine was situated 800 feet below sea level. If it ascends 250 feet, what is its new position?

18. In Buffalo, New York, the temperature was -14°F in the morning. If the temperature dropped 7°F , what is the temperature now?

19. Mt. Everest, the highest elevation in Asia, is 29,028 feet above sea level. The Dead Sea, the lowest elevation, is 1,312 feet below sea level. What is the difference between these two elevations?

Some skill work....(no calculators)

20. $35 - 58$

21. $-21 + (-78)$

22. $72 - (-34)$

23. $-18 - 29$

24. $17(-12)$

25. $-31(-16)$

26. $264 \div (-24)$

27. $-980 \div (-28)$

Summer Math Assignment: Intro. Algebra - Part 3

Complete these order of operations problems.

1) $16 + 3 \times 4 \div 2 - 11$

2) $45 - 3^3 + (21 - 12) \div 3 - 7$

3) $17 - 2 \times 12 \div 3 + (19 - 8)$

4) $90 \div 3 - 15 \div 5 + 4^2$

Solve.

5) In a recipe for 24 cookies, there contained $2\frac{1}{2}$ cups of flour, $1\frac{1}{4}$ cups of sugar, and $\frac{1}{3}$ cup of baking soda. How many total cups of dry ingredients were needed for the recipe?

6) In a relay race, Jane ran her leg in 12.6 seconds, Monica ran hers in 13.9 seconds, Elena ran hers in 12.2 seconds, and Kayla ran hers in 11.7 seconds. How long did it take for this team to finish the race?

7) Edna went to the store and bought a blouse for \$28. There was a 10% discount, so she paid less than the \$28, but then, of course, there was a 6% sales tax on the sale price. How much did Edna spend (including tax)?

8) Hannah sets her alarm clock for 5:40am each morning. Ingrid sets hers for 7:05am. How many more minutes does Ingrid get to sleep each morning?

Solve.

9) $x + 15 = 29$

10) $m - 24 = 51$

11) $7w = 56$

12) $9a = 45$

13) What is one-half of one-third of one-fourth of 24?

Step IV

Word Problems

On a separate sheet of paper, complete each word problem. Make sure to show all work. Also give the answers in complete sentences.

- 1) Elmer Fudd decided to grow a garden so he could make salad. He wants to make it 10.1 m long and 4.2 m wide. However, in order to avoid Bugs Bunny from entering his garden he must make a fence surrounding the garden. He decides to make the fence 11.2 m long and 5.0 m wide. What is the area between the fence and the garden?
- 2) Jenny bought 7 t-shirts, one for each of her seven brothers, for \$9.95 each. The cashier charged her an additional \$13.07 in sales tax. She left the store with a \$7.28. How much money did Jenny start with?
- 3) Amy passed around a basket of strawberries to the girls at her party. Before the party she ate 5 strawberries and gave a friend 3. Eight girls arrived at the party. The first girl took a strawberry, the second girl took 3 strawberries, the third girl took 5 strawberries and so on. After the last girl took her strawberries, the basket was empty. How many strawberries were in the basket at the beginning?
- 4) The magician said, "The average of seven numbers is 49. If 1 is added to the first number, 2 is added to the second number, 3 is added to the third number and so on up to the seventh number", what is the new average?
- 5) In a given school, there 240 boys and 260 girls.
 - a) What is the ratio of the number of girls to the number of boys?
 - b) What is the ratio of the number of boys to the total number of pupils in the school?
- 6) If Tim had lunch at \$50.50 and he gave 20% tip, how much did he spend?
- 7) Find the greatest common factor of 24, 40 and 60.
- 8) In 2008, the world population is about 6,760,000,000. Write the 2008 world population in scientific notation.
- 9) Give the rules of divisibility that you know.
- 10) Create factor trees for the following numbers- 590, 333, 200, and 1000. Next find the GCF and the LCM of 200 and 1000. Explain how you can use factor trees to find these.

