

Math Concepts Problem Set 6

Name _____

Assigned Friday 10/11, due Friday 10/18

No Work Shown, No Credit Given

Period _____

Problems #1-#4 can be completed on this paper. The work for problems #5-#14 needs to be attached on a separate piece of paper.

1. Write the correct inequality sign between each pair of decimals.

a) $47.2 \underline{\hspace{0.5em}} 47.197$

b) $1.0032 \underline{\hspace{0.5em}} 1.00032$

c) $0.0089 \underline{\hspace{0.5em}} 0.03$

2. Rewrite each set of decimals from least to greatest.

a) 17.801, 18.81, 17.8, 17.851

b) 5.9, 5.99, 5.09, 5.999

3. Which numbers are between 6.77 and 6.97? Circle all numbers that apply.

6.8

6.08

6.7

6.966

4. Fill in the missing numbers. Explain the pattern in words.

a) 5, 14, 23, 32, 41, _____, _____, _____

b) 3, 6, 12, 24, 48, _____, _____, _____

Pattern:

Pattern:

5. List all the factors of 20.

6. Write P or C to label each number as prime or composite. 15 16 17 18 19 20 21

----- **Please show your work for #6-#18 on a separate piece of paper.** -----

7. Write the prime factorization for each number:

a) 24

b) 64

c) 200

d) 5000

8. Find the value of each exponent expression: a) 7^2 b) 2^3 c) 3^4 d) 6^3

9. Elizabeth wants to challenge you to a “Toothpicks and Tiles” game. Using exactly six tiles, solve her challenges below. Justify your answers with pictures and labels.

a) Find a pattern where the number of toothpicks is more than double the number of tiles.

b) Find a pattern where the number of toothpicks is 4 more than the number of tiles.

10. Add or subtract. Remember to line up the decimal points.

a) $53.199 - 27.61$

b) $155.96 + 56.232$

c) $83.617 - 36.5$

d) $25 + 3.14$

11. Lulu is playing “Toothpicks and Tiles”. She has arranged 10 tiles as shown below. She wants to rearrange them so that the number of toothpicks remains the same. Draw one possible arrangement of the tiles



12. On a hot summer day, Leo and Stefano decided to buy some refreshments at the Fruit and Smoothies store. Fruit kabobs cost \$1.75 each. Smoothies cost \$2.50 each.

- a) Leo ordered two fruit kabobs and one smoothie. How much did he spend?
- b) Stefano ordered three fruit kabobs and four smoothies. How much did he spend?
- c) Arturo could not decide, but he had \$9.00 he could spend on fruit kabobs and smoothies. He knew he wanted at least one of each. What are some combinations he can afford? Show at least two possibilities.

13. Maria was putting together party favors (small bags of treats for each person) for her niece's birthday party. In each bag, she put three small chocolate candies and four hard candies. If Maria had 12 bags, how many candies did she use in all?

14. How many different rectangles can you draw with an area (number of "tiles") of 28? What is the perimeter (number of "toothpicks") of each one? Show your work.

15. Find the value of each expression.

- a) $6(4) + 5$ b) $10 + 2(10)$ c) $5(7) + 11 + 2(9)$ d) $10^3 - 10^2$

16. Find the missing number that makes each of the following number sentences true.

- a) $15x = 45$ b) $\frac{90}{x} = 45$ c) $9x = 45$ d) $\frac{x}{10} = 3$

17. Use the numbers 2, 3, and 4 and the **operations** (mathematical processes) of addition, subtraction, multiplication, or division to create three different numerical expressions with three different values. One of the expressions should have a value of 14.

18. Mrs. Bell paid \$50 for a used bicycle and then sold it to her neighbor for \$60. She decided to buy it back, but she had to pay \$70 for it. If she then sold it again for \$80, how much money did she make or lose overall? Show your solution in enough detail so a teammate could easily understand how you found your answer.

