Grade 4 Math Worksheet 2: Factors & Multiples -Types of Numbers (Advanced Level)

Name: _____

Date: _____

Part 1: Advanced Factorization and Common Factors

1. What is the prime factorization of 225?
a) 3 × 5 × 5 × 5
b) 3 × 3 × 5 × 5
c) 5 × 5 × 5 × 3
d) 2 × 3 × 5 × 5

---

2. What is the greatest common factor (GCF) of 56 and 98?
a) 7
b) 14
c) 28
d) 56

---

3. What is the prime factorization of 360?
a) 2 × 2 × 2 × 3 × 3 × 5
b) 2 × 3 × 5 × 5
c) 2 × 3 × 3 × 5 × 5
d) 2 × 2 × 2 × 3 × 3 × 3

---

4. What is the greatest common factor (GCF) of 72 and 108?

a) 6

b) 12

c) 18

d) 24

---

5. Find the GCF of 40, 60, and 100.

a) 5

b) 10

c) 20

d) 40

Part 2: Least Common Multiple (LCM) and Word Problems

6. What is the LCM of 14 and 18?

a) 42

b) 56

c) 72

d) 126

---

7. What is the LCM of 15, 20, and 30?

a) 60

b) 90

c) 120

d) 150

---

8. A farmer has 32 cows and 48 sheep. He wants to arrange them in pens with the same number of animals in each pen. What is the greatest number of animals that can go in each pen?

a) 4

b) 6

c) 8

d) 16

---

9. Two bells ring at intervals of 6 and 8 minutes. If they ring together at 12:00 p.m., at what time will they next ring together?

a) 12:48 p.m.

b) 12:24 p.m.

c) 12:36 p.m.

d) 1:00 p.m.

---

10. Sarah has 45 red marbles and 60 blue marbles. She wants to pack them into bags such that each bag has the same number of red and blue marbles. What is the greatest number of marbles she can put in each bag?

a) 5

b) 10

c) 15

d) 20

Part 3: Prime and Composite Numbers

11. Which of the following numbers is prime?

a) 49

b) 51

c) 53

d) 55

---

12. Which of the following numbers is composite?

a) 2

b) 3

c) 11

d) 25

---

13. Which of the following is a prime number?

a) 29

b) 39

c) 49

d) 57

14. Which of the following is a composite number?

a) 31

b) 41

c) 59

d) 63

15. Which of the following numbers is NOT a prime number?

a) 7

b) 11

c) 13

d) 15

Part 4: Mixed Problems - Factors, Multiples, and Prime Factorization

16. What is the LCM of 6, 8, and 10?

a) 60

b) 120

c) 240

d) 360

17. What is the prime factorization of 144?

a) 2 × 2 × 2 × 3 × 3

b) 2 × 3 × 5 × 5

c) 2 × 2 × 3 × 3

d) 2 × 2 × 3 × 3 × 3

18. What is the GCF of 54 and 72?

a) 6

b) 12

c) 18

d) 36

19. What is the LCM of 9 and 12?

a) 36

b) 72

c) 108

d) 144

---

20. What is the prime factorization of 500?

a) 2 × 2 × 5 × 5 × 5

b) 2 × 2 × 5 × 5 × 5 × 5

c) 2 × 5 × 5 × 5

d) 2 × 5 × 10 × 10

Part 5: Word Problems - Real-Life Applications

21. A bakery bakes 36 cupcakes and 48 cookies. They want to package them into boxes that contain the same number of cupcakes and cookies. What is the greatest number of cupcakes and cookies they can put in each box?

a) 4

b) 6

c) 8

d) 12

---

22. A carpenter has 72 wooden planks and 90 nails. He wants to arrange them into boxes with equal amounts of planks and nails. What is the greatest number of planks and nails that can go in each box?

a) 10

b) 12

c) 15

d) 18

---

23. Two buses leave the station at the same time. One bus travels every 8 minutes and the other travels every 12 minutes. If they both leave together at 9:00 a.m., when will they leave the station together again?

a) 9:30 a.m.

b) 9:48 a.m.

c) 10:00 a.m.

d) 10:24 a.m.

---

24. A gardener plants rows of flowers in sections. Each section contains 15 flowers. If she wants to plant a total of 120 flowers in equal sections, how many sections can she plant?

a) 5

b) 6

c) 8

d) 10

---

25. Sarah has 48 red balloons and 72 yellow balloons. She wants to give them out in gift bags, each containing the same number of red and yellow balloons. What is the greatest number of balloons she can put in each bag?

a) 6

b) 8

c) 12

d) 18

Bonus Challenge

26. Find the LCM of 16 and 24.

a) 48

b) 72

c) 96

d) 144

---

27. What is the GCF of 84 and 126?

a) 6

b) 12
c) 18
d) 42

---

28. What is the prime factorization of 324?
a) 2 × 2 × 3 × 3 × 3 × 3
b) 2 × 3 × 5 × 5 × 5
c) 2 × 2 × 2 × 3 × 3
d) 3 × 3 × 3 × 3 × 3

---

29. A company has 120 pens and 150 pencils. They want to pack them into boxes, each containing the same number of pens and pencils. What is the greatest number of pens and pencils they can pack into each box?
a) 15
b) 30
c) 45
d) 60

---

30. What is the LCM of 8, 12, and 15?
a) 60
b) 120
c) 180
d) 240

--BE THE CHAMPION!--