Math on the Fly!

NAME: _____ DATE: _____

Prime Factorization

Find the prime factorization of each number.

1.	24	2.	20	3.	90
4.	18	5.	56	6.	17
7.	43	8.	88	9.	96
10.	63	11.	98	12.	60

13.	144	14.	180
15.	210	16.	375
17.	294	18.	625
19.	1400	20.	2457

SOLUTIONS

1. 24

$24 = 2 \times 2 \times 2 \times 3$
$= 2^3 \times 3^1$

2. 20

$20 = 2 \times 2 \times 5$
$= 2^2 \times 5^1$

3. 90

$90 = 2 \times 3 \times 3 \times 5$
$= 2^1 \times 3^2 \times 5^1$

4. 18

$18 = 2 \times 3 \times 3$
$= 2^1 \times 3^2$

5. 56

$56 = 2 \times 2 \times 2 \times 7$
$= 2^3 \times 7^1$

6. 17

$17 = 17^1$ (Prime Number)

7. 43

$43 = 43^1$ (Prime Number)

8. 88

$88 = 2 \times 2 \times 2 \times 11$
$= 2^3 \times 11^1$

9. 96

$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$
$= 2^5 \times 3^1$

10. 63

$63 = 3 \times 3 \times 7$
$= 3^2 \times 7^1$

11. 98

$98 = 2 \times 7 \times 7$
$= 2^1 \times 7^2$

12. 60

$60 = 2 \times 2 \times 3 \times 5$
$= 2^2 \times 3^1 \times 5^1$

13. 144

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$= 2^4 \times 3^2$

14. 180

$180 = 2 \times 2 \times 3 \times 3 \times 5$
$= 2^2 \times 3^2 \times 5^1$

15. 210

$210 = 2 \times 3 \times 5 \times 7$
$= 2^1 \times 3^1 \times 5^1 \times 7^1$

16. 375

$375 = 3 \times 5 \times 5 \times 5$
$= 3^1 \times 5^3$

17. 294

$294 = 2 \times 3 \times 7 \times 7$
$= 2^1 \times 3^1 \times 7^2$

18. 625

$625 = 5 \times 5 \times 5 \times 5$
$= 5^4$

19. 1400

$1400 = 2 \times 2 \times 2 \times 5 \times 5 \times 7$
$= 2^3 \times 5^2 \times 7^1$

20. 2457

$2457 = 3 \times 3 \times 3 \times 7 \times 13$
$= 3^3 \times 7^1 \times 13^1$