

Review of Multiples, Factors, Factor Pairs, Prime Numbers, & Prime Factorization

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List the prime numbers through the thirties:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, ...

1) List the first five multiples of 7:

7, 14, 21, 28, 35, ...

2) List the factor pairs of 126.

$$1 \cdot 126$$

$$2 \cdot 63$$

$$3 \cdot 42$$

$$6 \cdot 21$$

$$7 \cdot 18$$

$$9 \cdot 14$$

$$\begin{array}{r} 18 \\ 7 \overline{)126} \\ \underline{-7} \\ 56 \end{array}$$

3) List the factors of 126.

(This was not asked on the practice sheet- Multiples, Factors & Factor Pairs.)

1, 2, 3, 6, 7,

9, 14, 18, 21, 42,

63, 126

4) What factor pair(s) of 126 yield a difference of 11?

$$18 - 7 = 11$$

5) Give the prime factorization of 126.

$$2 \overline{)126} = \underline{2 \cdot 3 \cdot 3 \cdot 7}$$

$$3 \overline{)63}$$

$$3 \overline{)21}$$

$$7$$

or

$$\underline{2 \cdot 3^2 \cdot 7}$$

6) List the first five multiples of 4:

4, 8, 12, 16, 20, ...

7) List the factor pairs of 78.

$$1 \cdot 78$$

$$2 \cdot 39$$

$$3 \cdot 26$$

$$6 \cdot 13$$

8) List the factors of 78.

1, 2, 3, 6, 13, 26,

39, 78

9) What factor pair(s) of 78 yield a sum of 29?

$$3 + 26 = 29$$

10) Give the prime factorization of 78.

$$2 \overline{)78}$$

$$3 \overline{)39}$$

$$13$$

$$78 = \underline{2 \cdot 3 \cdot 13}$$

11) Give the prime factorization of 42.

$$2 \overline{)42}$$

$$3 \overline{)21}$$

$$7$$

$$42 = \underline{2 \cdot 3 \cdot 7}$$

12) List the factor pairs of 42.

$$1 \cdot 42$$

$$2 \cdot 21$$

$$3 \cdot 14$$

$$6 \cdot 7$$

13) List the factors of 42.

1, 2, 3, 6, 7, 14,

21, 42

14) What factor pair(s) of 42 yield a difference of 1?

$$7 - 6 = 1$$

15) List the first five multiples of 8.

8, 16, 24, 32, 40, ...

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List the prime numbers through the thirties: (There are twelve.)

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, ...

16) List the factor pairs of 105.

1 • 105
3 • 35
5 • 21
7 • 15

$$\begin{array}{r} 35 \\ 3 \overline{)105} \\ \underline{-9} \\ 15 \end{array}$$

$$\begin{array}{r} 15 \\ 7 \overline{)105} \\ \underline{-7} \\ 35 \end{array}$$

17) Give the prime factorization of 105.

$$\begin{array}{r} 3 \overline{)105} \\ 5 \overline{)35} \\ 7 \end{array}$$

$$105 = 3 \cdot 5 \cdot 7$$

18) What factor pairs of 105 yield a sum of 38?

$$3 + 35 = 38$$

19) List the first five multiples of 12.

12, 24, 36, 48, 60, ...

20) List the factors of 105.

1, 3, 5, 7, 15, 21,
35, 105

21) List the first five multiples of 9.

9, 18, 27, 36, 45, ...

22) List the factor pairs of 72.

1 • 72
2 • 36
3 • 24
4 • 18
6 • 12
8 • 9

23) What factor pair(s) yield a difference of 14?

$$18 - 4 = 14$$

24) List the factors of 72.

1, 2, 3, 4, 6, 8, 9,
12, 18, 24, 36, 72

25) Give the prime factorization of 72.

$$\begin{array}{r} 2 \overline{)72} \\ 2 \overline{)36} \\ 2 \overline{)18} \\ 3 \overline{)9} \\ 3 \end{array}$$

$$72 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$$

or

$$2^3 \cdot 3^2$$

26) Give the prime factorization of 108.

$$\begin{array}{r} 2 \overline{)108} \\ 2 \overline{)54} \\ 3 \overline{)27} \\ 3 \overline{)9} \\ 3 \end{array}$$

$$108 = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3$$

or

$$2^2 \cdot 3^3$$

27) List the first five multiples of 6.

6, 12, 18, 24, 30, ...

28) List the factor pairs of 108.

1 • 108
2 • 54
3 • 36
4 • 27
6 • 18
9 • 12

$$\begin{array}{r} 12 \\ 9 \overline{)108} \\ \underline{-9} \\ 18 \end{array}$$

$$\begin{array}{r} 1 \\ 7 \overline{)108} \\ \underline{-7} \\ 38 \end{array}$$

29) What factor pair(s) of 108 yield a difference of 23?

$$27 - 4 = 23$$

30) List the factors of 108.

1, 2, 3, 4, 6, 9, 12, 18,
27, 36, 54, 108