Factors, Multiples, and Primes
Foundation worksheet

1)   Is 15 a factor of 5?

2)   Is 2 a factor of 8?

3)   Is 7 a factor of 7?

4)   Is 32 a multiple of 5?

5)   Is 84 a multiple of 7?

6)   Is 9 a multiple of 18?

7)   List the factors of 35.

8)   List the factors of 36.

9)   Find the highest common factor of 20 and 12.

10) Find the highest common factor of 32 and 44.

Factors, Multiples, and Primes
Foundation worksheet

11) Find the highest common factor of 7 and 9.

12) Find the lowest common multiple of 60 and 30.

13) Find the lowest common multiple of 30 and 70.

14) Is 1 a prime number?

15) Is 17 a prime number?

16) Is 27 a prime number?

17) Write 96 as a product of prime numbers.

18) Write 165 as a product of prime numbers.

19) Using your answers to questions 17 and 18, find the highest common factor of 96 and 165.

20) Using your answers to questions 17 and 18, find the lowest common multiple of 96 and 165.

Factors, Multiples, and Primes
Foundation worksheet

1) Is 15 a factor of 5?

No: 15 does not divide exactly into 5, so 15 is not a factor of 5.

In fact, 15 is a multiple of 5, which means 5 is a factor of 15.

2) Is 2 a factor of 8?

Yes: 2 divides exactly into 8, since 2 x 4 = 8.

Therefore 2 is a factor of 8.

3) Is 7 a factor of 7?

Yes: 7 divides exactly into 7, since 7 x 1 = 7. Therefore 7 is a factor of 7.

In fact, every positive whole number is a factor of itself.

4) Is 32 a multiple of 5?

No: 32 is not a multiple of 5, because 32 is not in the 5 times table.

You can test this by seeing that 5 does not divide into 32 exactly.

5) Is 84 a multiple of 7?

Yes: 84 is in the 7 times table, so 84 is a multiple of 7.

The relevant times table fact is 7 x 12 = 84.

6) Is 9 a multiple of 18?

No: 9 is not a multiple of 18, because 9 is not in the 18 times table.

The multiples of 18 are 18, 36, 54, 72, 90, 108,... and so on.

7) List the factors of 35.

The factors of 35 are: 1, 5, 7, 35.

8) List the factors of 36.

The factors of 36 are: 1, 2, 3, 4, 6, 9, 12, 18, 36.

9) Find the highest common factor of 20 and 12.

The factors of 20 are: 1, 2, **4**, 5, 10, 20.

The factors of 12 are: 1, 2, 3, **4**, 6, 12.

Therefore, the highest common factor of 20 and 12 is **4**.

10) Find the highest common factor of 32 and 44.

The factors of 32 are: 1, 2, **4**, 8, 16, 32.

The factors of 44 are: 1, 2, **4**, 11, 22, 44.

Therefore, the highest common factor of 32 and 44 is **4**.

11) Find the highest common factor of 7 and 9.

The factors of 7 are: 1 and 7.

The factors of 9 are: 1, 3, 9.

Therefore, the highest common factor of 7 and 9 is 1.

12) Find the lowest common multiple of 60 and 30.

The multiples of 60 are: 60, 120, 180,...

The multiples of 30 are: 30, 60, 90, 120,...

Therefore, the lowest common multiple of 60 and 30 is 60.

13) Find the lowest common multiple of 30 and 70.

The multiples of 30 are: 30, 60, 90, 120, 150, 180, 210, 240, 270,...

The multiples of 70 are: 70, 140, 210, 280, 350,...

Therefore, the lowest common multiple of 30 and 70 is 210.

14) Is 1 a prime number?

No: a prime number has exactly two factors.

1 is not a prime number because it only has one factor: 1.

15) Is 17 a prime number?

Yes: a prime number has exactly two factors.

17 is a prime number because it only has two factors: 1 and 17.

16) Is 27 a prime number?

No: 3 x 9 = 27, so 27 is not a prime number because it has more than two factors (remember 1 and 27 are also factors of 27).

17) Write 96 as a product of prime numbers.

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

18) Write 165 as a product of prime numbers.

$165 = 3 \times 5 \times 11$

19) Using your answers to questions 17 and 18, find the highest common factor of 96 and 165.

3

20) Using your answers to questions 17 and 18, find the lowest common multiple of 96 and 165.

$2^5 \times 3 \times 5 \times 11 = 5280$