Multiplication and Division Unit 1

Problem solving and reasoning questions

Which pair(s) of numbers under 20 have the largest number of common factors? What is the highest common factor?

Write common multiples of 4 and 6 up to 60. What is the lowest common multiple?
Use this information to find the lowest common multiple of 8 and 12.

True or false
- The lowest common multiple of two prime numbers, a and b is always a x b.
- The highest common factor of two multiples of 6 is always 6.

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Which pair(s) of numbers under 20 have the largest number of common factors? What is the highest common factor?

6 and 12 and 8 and 16 each have four common factors:
6 and 12 have common factors of 1, 2, 3 and 6 (highest).
8 and 16 have common factors of 1, 2, 4 and 8 (highest).

Write common multiples of 4 and 6 up to 60. What is the lowest common multiple? 12 (lowest), 24, 36, 48 and 60.

Use this information to find the lowest common multiple of 8 and 12. 24: the common multiples of 8 and 12 are double those of 4 and 6.

True or false
- The lowest common multiple of two prime numbers, a and b is always a x b. True, since they are prime numbers they will have no other factors so cannot have any other multiples in common.
- The highest common factor of two multiples of 6 is always 6.
  False as long as one of the numbers is a multiple of the other there will be a higher common factor, e.g. 12 and 24.