

DO NOW

List the first 10 prime numbers.

2, 3, 5, 7, 11, 13, 17, 19, 23, 29

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7.1 Factors and Factoring

Factoring - process to find the # (or expressions) that multiply to equal the given

prime number - has EXACTLY two factors
↳ 1 and itself

composite number - has 3 or more factors

*1 is neither prime nor composite

prime factorization - to break the # (or expression) into all of its prime factors

*tree

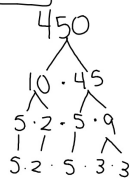
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Examples: Find the prime factorization.

1. $280 = 2^3 \cdot 5 \cdot 7$



2. $450 = 2 \cdot 3^2 \cdot 5^2$



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Examples: Write all positive integral factors.

3. 72

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

4. 120

1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

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Greatest Common Factor

GCF

For numbers: biggest number that divides into all of the given numbers

For variables: common variable to all terms
Choose the smallest exponent from that variable

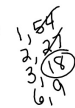
Examples:

5. GCF (10, 75)

5

6. GCF (180, 54)

18



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Graphing Calculator and GCF

MENU

2

Number

5

Greatest Common Divisor

gcd() ← on screen

Examples: 7. GCF (72, 108)

36

8. GCF (119, 85)

17

9. GCF (360, 800)

40

10. GCF (840, 1575)

105

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Examples:

11. GCF (a^3, a^2)
 a^2

12. GCF ($10x, 25x^2$)
 $5x$

13. GCF (mn^4, m^3n^2)
 mn^2

14. GCF ($6b^3c^5, 15b^2c^4$)
 $3b^2c^4$

15. GCF ($14xyz^2, 35x^2yz$)
 $7xyz$

16. GCF ($8y^3, 36y^5, 20y$)
 $4y$

HOMEWORK

Worksheet HW 7.1 - Day 1