

Homework: Factors, Greatest Common Factors and Factoring using Distributive Property

Find the factors of each number. Then classify each number as prime or composite.

1.) 18

1 18
2 9
3 6

Composite

2.) 37

1 37

Prime

3.) 48

1 48
2 24
3 16
4 12
6 8

Composite

Find the prime factorization of each integer. (Use a factor tree)

4.) 52

2 26
2 13

$2 \cdot 2 \cdot 13$

5.) -96

-1 96
2 48
2 24
2 12
2 6
2 3

$-1 \cdot 2^5 \cdot 3$

6.) 225

5 45
5 9
3 3

$3^2 \cdot 5^2$

Factor each monomial completely. (Use a factor tree)

7.) $30d^5$

5 6
2 3

$2 \cdot 3 \cdot 5 \cdot d \cdot d \cdot d \cdot d \cdot d$

8.) $-72mn$

-1 72
2 36
2 18
2 9
3 3

$-1 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot m \cdot n$

9.) $81b^2c^3$

9 9
3 3 3 3

$3^4 \cdot b \cdot b \cdot c \cdot c \cdot c$

$2 \cdot 3 \cdot 3 \cdot 3 \cdot b \cdot b \cdot c \cdot c \cdot c$

Find the GCF (Greatest Common Factor) of each set of monomials.

10.) 16, 24, 48

8

11.) 12, 30, 114

6

12.) 18, 45, 63

9

13.) $24fg^5, 56f^3g$

$8fg$

14.) $724r^2s^2, 36rs^3$

$4rs^2$

15.) $88c^3d, 40c^2d^2, 32c^2d$

$8c^2d$

Factor each polynomial using the distributive property.

16.) $24x + 48y$

$$24(x + 2y)$$

17.) $q^4 - 18q^3 + 22q$

$$q(q^3 - 18q^2 + 22)$$

18.) $45s^3 - 15s^2$

$$15s^2(3s - 1)$$

19.) $14c^3 - 42c^5 - 49c^4$

$$7c^3(2 - 6c^2 - 7c)$$

20.) $55p^2 - 11p^4 + 44p^5$

$$11p^2(5 - p^2 + 4p^3)$$

21.) $14y^3 - 28y^2 + y$

$$y(14y^2 - 28y + 1)$$

22.) $4x + 12x^2 + 16x^3$

$$4x(1 + 3x + 4x^2)$$

23.) $4a^2b + 28ab^2 + 7ab$

$$ab(4a + 28b + 7)$$

24.) $6y + 12x - 8z$

$$2(3y + 6x - 4z)$$