

Monomials (ALG.POL.01)

Determine the degree of each monomial.

1. $5x^8$

2. $-16m^3n$

3. $\sqrt{3}m^7n^2$

4. $-y^3z$

5. $\frac{2}{5}a^2bc^5$

6. $2xy^0z^2$

Explain why each algebraic expression is not a monomial.

7. $\frac{5}{n^3}$

$9p^3 - 5p^2$

$\frac{7}{3}u^5y^{-3}$

8. $-3\sqrt{t^3}$

$\frac{3x}{2y}$

$15x^4y^{2/3}$

Write a monomial for each description.

9. degree 8 monomial with 2 variables

10. degree 11 monomial with 3 variables

11. degree 5 monomial with 1 variable

12. degree 4 monomial with 3 variables

13. degree 12 monomial

14. degree 0 monomial

Multiply. Determine the degree of each product.

15. $6x^4 \cdot 3x^7$

16. $5n \cdot n^3 \cdot -2$

17. $-\frac{3}{10}a^2b \cdot 25ab^4$

18. $14xy^2z \cdot -7x^0z^2 \cdot 2x^2y$

19. $30x^3y \cdot \frac{6^2x}{5^3} \cdot \frac{200xy^4}{9}$

20. $\frac{2}{7}m^5n^3 \cdot \frac{14}{5}n^2$

21. $\sqrt{3}y^3 \cdot 2\sqrt{6} \cdot 3\sqrt{2}y^3$

22. $\frac{\sqrt{10}}{3}m^3n^0 \cdot \frac{6\sqrt{2}}{5}mn \cdot n^2$

23. $(-6x^4yz^2)^3$

24. $(\sqrt{2}a^8b^0c)^4$

Divide. Determine if the quotient is a monomial. If it is, determine its degree; if it is not, indicate why not.

25. $\frac{15x^5}{-3x^3}$

26. $\frac{21k^7}{14k^6}$

27. $\frac{18m^4n^{10}}{30m^6n^8}$

28. $\frac{6^2x^3y^3}{2^3x \cdot 3y^5}$

29. $\frac{\sqrt{10}m^3n^2}{\sqrt{2}mn^2}$

30. $\frac{30\sqrt{30}a^2bc^6}{12\sqrt{6}ab^2c^3}$

Given the length and width of each rectangle, calculate its area, including units.

31. Length: $(7x)$ inches Width: $(4x^2)$ inches

32. Length: $(3a^2)$ centimeters Width: $(9ab)$ centimeters

33. Length: $(\sqrt{3}m^2n)$ meters Width: $(2\sqrt{3}mn^4)$ meters

34. Length: $(\frac{11}{6}x^5)$ feet Width: $(\frac{5}{2}xy^2)$ feet