

Polynomial Review

Fill in the blank.

1. A monomial consists of a variable, a number or their product. An example is x^2 .
2. A binomial is the sum of two monomials. An example is $x + y$.
3. A trinomial is three terms long. An example is $x^2 + 2x + 1$.

Add or Subtract. Make sure to pay attention to the sign.

4. $(5p^2 - 3) + (2p^2 - 3p^3)$
 $7p^2 - 3p^3 - 3$
5. $(4n - 3n^3) - (3n^3 + 4n)$
 $-6n^3$
6. $(4 + 2n^3) + (5n^3 + 2)$
 $7n^3 + 6$
7. $(4r^3 + 3r^4) + (r^4 - 5r^3)$
 $4r^4 - r^3$
8. $(3a^2 + 1) - (4 + 2a^2)$
 $a^2 - 3$
9. $(3x^4 - 3x) - (3x - 3x^4)$
 $6x^4 - 6x$
10. $(5a + 4) - (5a + 3)$
 1
11. $(-4k^4 + 14 + 3k^2) + (-3k^4 - 14k^2 - 8)$
 $-7k^4 - 11k^2 + 6$

Simplify.

12. $4x^5(9x^3)$
 $36x^8$
13. $(4x^2y^5)^3$ $64x^6y^{15}$
14. $-7x^5(3x^2)$
 $-21x^7$
15. $(-2x^3y^7)^3$ $-8x^9y^{21}$
16. $8x^7y^5(10x^2y)$
 $80x^9y^6$
17. $(10x^{24}y^{20})^2$ $100x^{48}y^{40}$

FOIL to simplify.

18. $(x+3)(x+8)$

$$x^2 + 11x + 24$$

19. $(x-9)(x+10)$

$$x^2 + x - 90$$

20. $(m-6)(m-11)$

$$m^2 - 17m + 66$$

21. $(2x+3)(5x+4)$

$$10x^2 + 23x + 12$$

22. $(c-8)(c-9)$

$$c^2 - 17c + 72$$

23. $(4g+9)(g-3)$

$$4g^2 - 3g - 27$$

Divide. Write all answers with positive exponents.

24. $\frac{120x^{10}}{10x^5}$ $12x^5$

25. $\frac{20x^{14}}{10x^3}$ $2x^{11}$

26. $\frac{65x^{19}y^{17}}{13x^5y^5}$ $5x^{14}y^{12}$

27. $\frac{45y^{16}}{9y^8}$ $5y^8$

Factor.

28. $x^2 + 10x + 25$

$$(x+5)(x+5)$$

29. $w^2 - w - 20$

$$(x-5)(x+4)$$

30. $e^2 - 12e + 20$

$$(e-10)(e-2)$$

31. $g^2 + 5g - 14$

$$(g+7)(g-2)$$

32. $x^2 + 9x - 22$

$$(x+11)(x-2)$$

33. $x^2 + 16x + 60$

$$(x+4)(x+10)$$