

Section 11.5 (page 850)

Vocabulary Check (page 850)

1. binomial coefficients
2. Binomial Theorem; Pascal's Triangle
3. $\binom{n}{r}$; ${}_nC_r$
4. expanding a binomial

1. 10
2. 28
3. 1
4. 1
5. 15,504
6. 792
7. 210
8. 210
9. 4950
10. 4950
11. 56
12. 8
13. 35
14. 20
15. $x^4 + 4x^3 + 6x^2 + 4x + 1$
16. $x^6 + 6x^5 + 15x^4 + 20x^3 + 15x^2 + 6x + 1$
17. $a^4 + 24a^3 + 216a^2 + 864a + 1296$
18. $a^5 + 25a^4 + 250a^3 + 1250a^2 + 3125a + 3125$
19. $y^3 - 12y^2 + 48y - 64$
20. $y^5 - 10y^4 + 40y^3 - 80y^2 + 80y - 32$
21. $x^5 + 5x^4y + 10x^3y^2 + 10x^2y^3 + 5xy^4 + y^5$
22. $c^3 + 3c^2d + 3cd^2 + d^3$
23. $r^6 + 18r^5s + 135r^4s^2 + 540r^3s^3 + 1215r^2s^4 + 1458rs^5 + 729s^6$
24. $x^4 + 8x^3y + 24x^2y^2 + 32xy^3 + 16y^4$
25. $243a^5 - 1620a^4b + 4320a^3b^2 - 5760a^2b^3 + 3840ab^4 - 1024b^5$
26. $32x^5 - 400x^4y + 2000x^3y^2 - 5000x^2y^3 + 6250xy^4 - 3125y^5$
27. $8x^3 + 12x^2y + 6xy^2 + y^3$
28. $343a^3 + 147a^2b + 21ab^2 + b^3$
29. $x^8 + 4x^6y^2 + 6x^4y^4 + 4x^2y^6 + y^8$
30. $x^{12} + 6x^{10}y^2 + 15x^8y^4 + 20x^6y^6 + 15x^4y^8 + 6x^2y^{10} + y^{12}$
31. $\frac{1}{x^5} + \frac{5y}{x^4} + \frac{10y^2}{x^3} + \frac{10y^3}{x^2} + \frac{5y^4}{x} + y^5$
32. $\frac{1}{x^6} + \frac{12y}{x^5} + \frac{60y^2}{x^4} + \frac{160y^3}{x^3} + \frac{240y^4}{x^2} + \frac{192y^5}{x} + 64y^6$
33. $2x^4 - 24x^3 + 113x^2 - 246x + 207$
34. $3x^5 + 15x^4 + 26x^3 + 18x^2 + 3x - 1$
35. $32t^5 - 80t^4s + 80t^3s^2 - 40t^2s^3 + 10ts^4 - s^5$
36. $81 - 216z + 216z^2 - 96z^3 + 16z^4$
37. $x^5 + 10x^4y + 40x^3y^2 + 80x^2y^3 + 80xy^4 + 32y^5$
38. $64v^6 + 576v^5 + 2160v^4 + 4320v^3 + 4860v^2 + 2916v + 729$

39. $120x^7y^3$ 40. y^6 41. $360x^3y^2$
42. $-35,000x^4z^3$ 43. $1,259,712x^2y^7$
44. $32,400ab^4$ 45. $32,476,950,000x^4y^8$
46. $1.293 \times 10^{13}x^9y^6$ 47. 1,732,104
48. 3,247,695 49. 180 50. 720
51. -326,592 52. 16,128 53. 210 54. 45
55. $x^2 + 12x^{3/2} + 54x + 108x^{1/2} + 81$
56. $8t^{3/2} - 12t + 6t^{1/2} - 1$
57. $x^2 - 3x^{4/3}y^{1/3} + 3x^{2/3}y^{2/3} - y$
58. $u^3 + 10u^{12/5} + 40u^{9/5} + 80u^{6/5} + 80u^{3/5} + 32$
59. $3x^2 + 3xh + h^2, h \neq 0$
60. $4x^3 + 6x^2h + 4xh^2 + h^3, h \neq 0$