

Test 2 Review M28

$$1. \begin{array}{l} -4^3 \\ -4 \cdot 4 \cdot 4 \\ -64 \end{array}$$

$$2. \left(\frac{1}{7}\right)^2 = \frac{1^2}{7^2} = \frac{1}{49}$$

$$3. \begin{array}{l} x^2 \quad x = -6 \\ (-6)^2 \\ (-6)(-6) = 36 \end{array}$$

$$4. x^5 \cdot x^9 = x^{14}$$

$$5. \begin{array}{l} (-7p^8)(7p^6) \\ -49p^{14} \end{array}$$

$$6. \begin{array}{l} x^4 \cdot x^5 \cdot x^7 \\ x^{16} \end{array}$$

$$7. (y^5)^9 = y^{45}$$

$$8. (5^4)^7 = 5^{28}$$

$$9. (-4a)^2 = 16a^2$$

$$10. (mn)^8 = m^8 n^8$$

$$11. (4x^3 y^3)^2 = 16x^6 y^6$$

$$12. \left(\frac{xy^4}{3}\right)^4 = \frac{x^4 y^{16}}{81}$$

$$13. \left(\frac{4x^2 y^3}{z^4}\right)^4 = \frac{256x^8 y^{12}}{z^{16}}$$

$$14. \frac{h^4}{h^1} = \frac{h^3}{1} = h^3$$

$$15. \frac{(-5)^{20}}{(-5)^{18}} = \frac{(-5)^2}{1} = 25$$

$$16. \frac{s^{12} t^{10}}{s^2 t^1} = s^{10} t^9$$

$$17. \frac{63m^8 n^{11}}{9m^7 n^8} = 7mn^3$$

$$18. -3y^0 = -3 \cdot 1 = -3$$

$$19. \left(\frac{5x^3}{y^2}\right)^5 = \frac{3125x^{15}}{y^{10}}$$

$$20. (-5z^2)(6z^3) = -30z^5$$

$$21. (6ab)^4 = 1296a^4 b^4$$

$$22. \frac{7x^9 + 9x^9 - 5x^9}{11x^6}$$

$$23. (5x-2) + (12x+18)$$
$$\boxed{5x} \text{ } \boxed{-2} + \boxed{12x} \text{ } \boxed{+18}$$

$$17x + 16$$

$$24. (-6x-6) - (-13x+9)$$

$$\boxed{-6x} \text{ } \boxed{-6} + \boxed{13x} \text{ } \boxed{-9}$$

$$7x - 15$$

$$25. (5x-2) + (12x+18)$$
$$\boxed{5x} \text{ } \boxed{-2} + \boxed{12x} \text{ } \boxed{+18}$$

$$17x + 16$$

$$25. (9n^7+15n^6-2) - (5n^7+11n^6+10)$$

$$\boxed{9n^7} \text{ } \boxed{+15n^6} \text{ } \boxed{-2} \text{ } \boxed{-5n^7} \text{ } \boxed{-11n^6} \text{ } \boxed{-10}$$

$$4n^7 + 4n^6 - 12$$

$$26. (3x^9 - 9x^8 + 8x^7 - 8) + (5x^9 - 3x^8 + 4x^7 + 7)$$

$$8x^9 - 12x^8 + 12x^7 - 1$$

$$27. 3x^1(-9x^1+8)$$

$$-27x^2 + 24x$$

$$28. 2z^1(-8z^2-2z^1+3)$$

$$-16z^3 - 4z^2 + 6z$$

$$29. -14y^1(8x^3-3y^1+8x-2y^3)$$

$$-8x^3y + 3y^2 - 8xy + 2y^4$$

$$30. \begin{array}{c} \text{F} \quad \text{L} \\ (2x+12)(x-11) \\ \text{F} \\ 2x^2 \boxed{-22x+12x} -132 \\ 2x^2 - 10x - 132 \end{array}$$

$$36. \begin{array}{c} (x+2)(x+10) \\ x^2 \boxed{+10x+2x} + 20 \\ x^2 + 12x + 20 \end{array}$$

$$31. \begin{array}{c} (4x-2)(5x+2) \\ 20x^2 \boxed{+8x-10x} -4 \\ 20x^2 - 2x - 4 \end{array}$$

$$37. \begin{array}{c} (a-5)(a+3) \\ a^2 \boxed{+3a-5a} -15 \\ a^2 - 2a - 15 \end{array}$$

$$32. \begin{array}{c} (y-3)(y^2+3y-2) \\ y^3 + 3y^2 - 2y \\ -3y^2 - 9y + 6 \\ \hline y^3 - 11y + 6 \end{array}$$

$$38. \begin{array}{c} (x-6y)(x-2y) \\ x^2 \boxed{-2xy-6xy} + 12y^2 \\ x^2 - 8xy + 12y^2 \end{array}$$

$$33. \begin{array}{c} (x+1)(x^2-x+1) \\ x^3 - x^2 + x \\ + x^2 - x + 1 \\ \hline x^3 + 1 \end{array}$$

$$34. \begin{array}{c} (x-5)^3 \\ (x-5) \boxed{(x-5)(x-5)} \\ (x-5) \boxed{x^2-5x-5x+25} \\ (x-5)(x^2-10x+25) \end{array}$$

$$\begin{array}{c} (x-5)(x^2-10x+25) \\ x^3 - 10x^2 + 25x \\ - 5x^2 + 50x - 125 \\ \hline x^3 - 15x^2 + 75x - 125 \end{array}$$

$$39. (x+6)^2$$

$$(x+6)(x+6)$$

$$x^2 + 6x + 6x + 36$$

$$x^2 + 12x + 36$$

$$44. \left(\frac{1}{2}\right)^{-3} = \frac{1^{-3}}{2^{-3}} \rightarrow \frac{2^3}{1} = 8$$

$$\frac{8}{1} = 8$$

$$40. (m-z)^2$$

$$(m-z)(m-z)$$

$$m^2 - mz - mz + z^2$$

$$m^2 - 2mz + z^2$$

$$45. (-5)^{-2} = \frac{1}{(-5)^2} = \frac{1}{25}$$

$$46. \frac{x^9 (x^{-8})^{-6}}{(x^{-3})^{-8}} = \frac{x^9 x^{48}}{x^{24}} = \frac{x^{57}}{x^{24}} = x^{33} = x$$

$$41. (x+8)(x-8)$$

$$x^2 - 8x + 8x - 64$$

$$x^2 - 64$$

$$47. (x^{-4} y^3)^{-1} = x^4 y^{-3} = \frac{x^4}{y^3}$$

$$48. \frac{5r^{-1} (r^5)^3}{4(r^{-4})^2} = \frac{5r^{-1} r^{15}}{4r^{-8}}$$

$$42. (2p-1)(2p+1)$$

$$4p^2 + 2p - 2p - 1$$

$$4p^2 - 1$$

$$= \frac{5r^8 r^{15}}{4r^1}$$

$$= \frac{5r^{23}}{4r^1} = \frac{5r^{22}}{4}$$

$$43. 5^{-4} = \frac{1}{5^4} = \frac{1}{625}$$

$$49. \quad (-5x^6 \textcircled{y^{-7}})(2x^{\textcircled{-1}}y)$$
$$\frac{(-5x^6)(2y)}{y^7 x^1} = \frac{-10x^6 y^1}{y^6 x^1} = \frac{-10x^5}{y^6}$$

$$50. \quad \underbrace{6,300,000}_{\leftarrow} \quad 6.3 \times 10^6$$

$$51. \quad \underbrace{0.000458}_{\leftarrow} \quad 4.58 \times 10^{-4}$$

$$52. \quad \underbrace{0.0000068217}_{\leftarrow} \quad 6.8217 \times 10^{-6}$$

$$53. \quad \underline{8.79} \times 10^6$$

$$8,790,000$$

$$54. \quad \underline{4.48} \times 10^{-4}$$

$$.000448$$

$$55. \quad \frac{20x^{-6} \oplus 12x^{-8}}{-2x^{-10}} = \frac{20x^{-6}}{-2x^{-10}} + \frac{12x^{-8}}{-2x^{-10}}$$

$$= \frac{-10x^{10} \leftarrow}{x^6} \oplus \frac{-6x^{10}}{x^8}$$

$$= -10x^4 - 6x^2$$

$$56. \frac{48x^6 + 56x^5 + 56x^4}{8x^5}$$

$$\frac{48x^6}{8x^5} + \frac{56x^5}{8x^5} + \frac{56x^4}{8x^5}$$

$$6x + 7 + \frac{7}{x}$$

$$57. \frac{30x^4 - 36x^3 + 42x^2}{6x^3}$$

$$\frac{30x^4}{6x^3} - \frac{36x^3}{6x^3} + \frac{42x^2}{6x^3}$$

$$5x - 6 + \frac{7}{x}$$

$$58. \frac{14x^2 + 4x - 11}{2x}$$

$$\frac{14x^2}{2x} + \frac{4x}{2x} - \frac{11}{2x}$$

$$7x + 2 - \frac{11}{2x}$$