

# HW 86

A2

$$1. x^4 + 4x^3(3) + 6x^2(3)^2 + 4x(3)^3 + 3^4$$

$$x^4 + 12x^3 + 54x^2 + 108x + 81$$

$$2. y^6 + 6y^5 + 15y^4 + 20y^3 + 15y^2 + 6y + 1$$

$$3. (2x)^4 + 4(2x)^3(-3) + 6(2x)^2(-3)^2 + 4(2x)(-3)^3 + 1(-3)^4$$

$$16x^4 - 96x^3 + 216x^2 - 216x + 81$$

$$4. 2^7 + 7(2)^6(-x)^1 + 21(2)^5(-x)^2 + 35(2)^4(-x)^3 + 35(2)^3(-x)^4 + 21(2)^2(-x)^5 + 7(2)(-x)^6 + 1(-x)^7$$
$$= 128 - 448x + 672x^2 - 560x^3 + 280x^4 - 84x^5 + 14x^6 - x^7$$

$$5. x^4 + 4(x^3)(-2y) + 6(x^2)(-2y)^2 + 4(x)(-2y)^3 + (-2y)^4$$
$$= x^4 - 8x^3y + 24x^2y^2 - 32xy^3 + 16y^4$$

$$6. (2x)^5 + 5(2x)^4(3y) + 10(2x)^3(3y)^2 + 10(2x)^2(3y)^3 + 5(2x)(3y)^4 + (3y)^5$$
$$= 32x^5 + 240x^4y + 720x^3y^2 + 1080x^2y^3 + 810xy^4 + 243y^5$$

$$7. (x+5)^4$$

$$8. (y-2)^5$$

$$9. \frac{-12}{30} + \frac{27}{30} = \frac{15}{30}$$

$$10. \frac{12}{15} - \frac{10}{15} = \frac{2}{15}$$

$$11. \frac{-8}{12} - \frac{9}{12} + \frac{10}{12} = \frac{-7}{12}$$

$$12. \frac{24}{30} - \frac{20}{30} - \frac{3}{30} = \frac{1}{30}$$

$$13. \frac{3}{5} \cdot \frac{8}{3} = \frac{8}{5}$$

$$14. \frac{-6}{7} \cdot \frac{8}{3} = \frac{-16}{7}$$

$$15. \frac{9}{7} \cdot \frac{3}{1} = \frac{27}{7}$$

$$\text{Nov } 17. \frac{-1}{20} \cdot \frac{-3}{7} = \frac{1}{14}$$

$$18. \frac{8}{1} \cdot \frac{11}{2} = 44$$

$$19. \frac{9}{4} \cdot \frac{-21}{8} = \frac{-189}{32}$$

$$20. \frac{3}{1} \cdot \frac{11}{2} = \frac{11}{2}$$

$$21. \frac{7}{3} \cdot \frac{7}{5} = \frac{49}{15}$$

$$22. \frac{x}{6} + \frac{4x}{6} = 5$$

$$\frac{5x}{6} = 5$$

$$\frac{5x}{6} = 30$$
$$\boxed{x = 6}$$

$$23. \frac{15}{3x} - \frac{5}{3x} = 2$$

$$\frac{10}{3x} = 2$$

$$10 = 6x$$

$$\boxed{\frac{5}{3} = x}$$

$$24. \frac{4x}{12} - \frac{3x}{12} = \frac{2}{3}$$

$$\frac{x}{12} = \frac{2}{3}$$

$$3x = 2.4$$

$$\boxed{x = 8}$$

$$25. \frac{x}{2} - \frac{4}{1} = \frac{x}{3}$$

$$\frac{x}{2} - \frac{8}{2} = \frac{x}{3}$$

$$\frac{x-8}{2} = \frac{x}{3}$$

$$3(x-8) = 2x$$

$$3x - 24 = 2x$$

$$\boxed{x = 24}$$