(a) Raising x to the power of n

1. 5^3
    a. 5 * 5 * 5 = 625
2. 6^{10}
    a. 6 * 6 * 6 * 6 * 6 * 6 * 6 * 6 * 6 * 6 = 60466176
3. 2^5
    a. 2 * 2 * 2 * 2 * 2 = 32

(b) Polynomial Evaluation Using Horner's Rule

1. $3x^4 - x^3 + 2x^2 - 5x + 1$ for x = 5
    a. (((3*5 - 1)*5 + 2)*5 - 5) *5+ 1
    b. (((15 - 1)5 + 2) 5 - 5) * 5 + 1
    c. ((14 * 5 + 2)5 - 5) * 5 + 1
    d. (72 * 5 - 5) * 5 + 1
    e. 355 * 5 + 1
    f. 1776
2. $2x^3 - x + 8$ for x = 3
    a. ((2 * 3 + 0) * 3 -1) * 3 + 8
    b. (6 * 3 - 1) * 3 + 8
    c. 17* 3 + 8
    d. 59
3. $X^5 + 3x^3 - 6x^2 - 2x$ for x = 2
    a. ((((2 + 0) * 2 + 3) * 2 - 6) *2 -2)* 2 + 0
    b. (((2 * 2 +3) * 2 - 6) * 2 - 2) *2
    c. ((7 * 2 - 6) * 2 - 2) * 2
    d. (8 * 2 - 2) * 2
    e. 14 * 2
    f. 28

(c) Euclid's algorithm

1. Find the greatest common denominator of 265, 175
    a. GCD(265, 175)
        i. 265/175 = 1 R 90, GCD(175,90) = GCD(265, 175)
    b. GCD(175,90)
        i. 175/90 = 1 R 85 GCD(175,90) = GCD(90, 85)
    c. GCD(90, 80)
        i. 90/85 = 1 R 5 GCD(90, 85) = GCD(80, 5)
    d. GCD(80, 5)
        i. 80/5 = 16 R 0
        ii. **5** is the greatest common denominator
2. Find the greatest common denominator of 430, 113
    a. GCD(430, 113)
        i. 430/113 = 3 R 91, GCD(430, 113) = GCD(113, 91)
    b. GCD(113, 91)

            i. 113/91 = 1 R 22, GCD(113, 91) = GCD(91, 22)
        c. GCD(91, 22)
            i. 91/22 = 4 R 3, GCD(91, 22) = GCD(22, 3)
        d. GCD(22, 3)
            i. 22/3 = 7 R 1, GCD(22, 3) = GCD(3, 1)
        e. GCD(3, 1)
            i. 3/1 = 3 R0
            ii. **1** is the greatest common denominator
3. Find the greatest common denominator of 510 , 255
    a. GCD(510, 255)
        i. 510/255 = 2 R 0
        ii. **255** is the greatest common denominator

(d) Least Common Multiple

1. Solution: The Least Common Multiple (LCM) can be solved by (x * y)/GCD(x,y)
2. Sample Problems
    a. LCM(223, 32)
        i. 223 * 32/GCD(223,32)
        ii. 7136/GCD(223,32)
            1. GCD(223,32)
                a. 223/32 = 7 R 31, GCD(223,32) = GCD(32, 31)
            2. GCD(32, 31)
                a. 32/31 = 1 R 1, GCD(32, 31) = GCD(31, 1)
            3. GCD(31,1)
                a. 31/1 = 31 R0
                b. GCD(223, 32) = 1
        iii. 7136/1
        iv. LCM = **7136**
    b. LCM(50, 27)
        i. 50 * 27/GCD(50,27)
        ii. 1350/GCD(50,27)
            1. GCD(50,27)
                a. 50/27 = 1 R 23, GCD(50,27) = GCD(27,23)
            2. GCD(27, 23)
                a. 27/23 = 1 R 4, GCD(27,23) = GCD(23, 4)
            3. GCD(23,4)
                a. 23/4 = 5 R 3, GCD(23, 4) = GCD(4,3)
            4. GCD(4,3)
                a. 4/3 = 1 R1, GCD(4,3) = GCD(3,1)
            5. GCD(3,1)
                a. 3/1 = 3 R 0
                b. GCD(50,27) = 1
        iii. 1350/1
        iv. LCM(50,27) = 1350

c. LCM(200, 15)
    i. 200 * 15/ GCD(200,15)
    ii. 3000/GCD(200,15)
        1. GCD(200, 15)
            a. 200/15 = 13 R 5, GCD(200,15) = GCD(15, 5)
        2. GCD(15, 5)
            a. 15/5 = 3 R 0
            b. GCD(200,15) = 5
    iii. 3000/5
    iv. LCM(200, 15) = 600