Fully-worked Solutions

FORM **1**

CHAPTER **2**

Summative Practice

Section A

1 Factors of 48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
   $m = 3, n = 6, p = 16$
   $m + n + p = 3 + 6 + 16$
   $\qquad\qquad = 25$
   Answer: **D**

2
3	18, 45, 72
3	6, 15, 24
	2, 5, 8

Highest common factor = $3 \times 3 = 9$
Answer: **B**

3 20 pens = 2×10, 16 erasers = 2×8
   Maximum number of packages = 8
   Answer: **B**

4
4	8, 12, 36
2	2, 3, 9
3	1, 3, 9
3	1, 1, 3
	1, 1, 1

LCM = $4 \times 2 \times 3 \times 3 = 72$
Answer: **B**

5 LCM of two prime numbers
   = product of the two numbers
   Answer: **C**

6 $78 = 2 \times 3 \times 13$
   $\rightarrow$ smallest prime factor = 2,
   largest prime factor = 13
   Difference = $13 - 2 = 11$
   Answer: **C**

7 $18 = 2 \times 9$
   $8 = 2 \times 4$
   LCM of 18 and 8 = $2 \times 4 \times 9 = 72$
   Therefore, the minimum quantities are 4 packages of plastic cups and 9 packages of paper plates.
   Answer: **B**

Section B

1 Factors of 54 = 1, 2, 3, 6, 9, 18, 27, 54
   Missing factors = 2, 18, 27 and 54

2 (a) $24 = 8 \times 3 = 4 \times 6 = 24 \times 1$
        Therefore, the possible values of x = 6, 24
   (b) $8 = \mathbf{4} \times 2, 56 = \mathbf{8} \times 7$
        $28 = \mathbf{4} \times 7, 56 = \mathbf{28} \times 2$
        The possible values of p are 8 and 28.

3 (a) Factors of 55 = 1, 5, 11, 55
        Missing factors = 1, 11
   (b) (i) $121 = 11 \times 11$
              $\underline{11}$ is a prime factor of 121.
        (ii) $27 = 3 \times 3 \times 3$
              Number 27 has $\underline{1}$ prime factor.

Section C

1 (a) (i) $30 = 5 \times 2 \times 3$
              $42 = 2 \times 3 \times 7$
              LCM of 30 and 42
              $= 2 \times 3 \times 5 \times 7$
              $= 210$
        (ii) LCM of 3, 4, 18 = 36
              LCM of 4, 9, 18 = 36
              Therefore, $x = 3, 9$
   (b)

Factors of 36	Common factors of 16 and 60	Common multiples of 12 and 16
1, 2, 3, 4, 6	**1, 2, 4**	**48, 96**

   (c)
3	30, 120
5	10, 40
2	2, 8
	1, 4

   HCF of 30 and 120 = $3 \times 5 \times 2$
   $\qquad\qquad\qquad\qquad = 30$
   Therefore, the maximum number of students = 30 such that each student will receive 4 crayons and a sheet of coloured paper.
   (d) $4 = 2 \times 2$
        $6 = 2 \times 3$
        $8 = 2 \times 2 \times 2$
        LCM of 4, 6 and 8 = $2 \times 2 \times 2 \times 3$
        $\qquad\qquad\qquad\qquad = 24$
        The three of them will eat at the restaurant after 24 days.

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