GRADE 8 · WHOLE NUMBERS

HCF and LCM (Highest Common Factor & Lowest Common Multiple)

MEMORANDUM

Name: ..... Class: .....

Date: .....

MARK ____ / 13

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

1 Find the HCF of 24 and 36. (2)

> $24 = 2^3 \times 3$, $36 = 2^2 \times 3^2$ → shared $2^2 \times 3 =$ **12** ✓✓ (2)

2 Find the LCM of 8 and 12. (2)

> $8 = 2^3$, $12 = 2^2 \times 3$ → $2^3 \times 3 =$ **24** ✓✓ (2)

3 Find the HCF and LCM of 18 and 30. (3)

> $18 = 2 \times 3^2$, $30 = 2 \times 3 \times 5$ → HCF $= 2 \times 3 =$ **6**; LCM $= 2 \times 3^2 \times 5 =$ **90** ✓✓✓ (3)

4 Two bells ring every 15 min and every 20 min. They ring together at 08:00. When do they next ring together? (3)

> LCM of 15 and 20 = 60 min → **09:00** ✓✓✓ (3)

5 60 red and 48 blue beads are shared into identical packs (same reds per pack, same blues per pack) using as many packs as possible. How many packs? (3)

> Number of packs = the HCF of 60 and 48. $60 = 2^2 \times 3 \times 5$, $48 = 2^4 \times 3$ → HCF $= 2^2 \times 3 =$ **12 packs** ✓✓✓ (3)

TOTAL: 13 marks

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