Unit 8 · Unitary Method

HARDER PRACTICE QUESTIONS · ANSWER KEY

Full marks 30

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Spot the error

ANSWER U · 3

i. She divided by the wrong number. To find the cost of **one** kilogram, divide by the 8 kg that the price is for, then multiply by 5.

ii. 1 kg costs 720 ÷ 8 = Rs 90, so 5 kg cost 90 × 5 = **Rs 450**.

iii. 5 kg is **less** than 8 kg, so it must cost less than Rs 720. Her Rs 1152 is more.

MARKING SCHEME

- ✓ Divide by 8 (the quantity the price is for), not by 5.
- ✓ Rs 450.
- ✓ 5 kg must cost less than Rs 720.

2 Copy and complete

ANSWER U · 4

Number of chairs	**4**	**1**	**7**	**9**	**15**
Cost (Rs)	6000	**1500**	**10500**	13500	22500

One chair: 6000 ÷ 4 = Rs 1500. Seven chairs: 1500 × 7 = Rs 10500. Then work backwards: 13500 ÷ 1500 = 9 chairs, and 22500 ÷ 1500 = 15 chairs.

MARKING SCHEME

- ✓ Rs 1500 for one chair.
- ✓ Rs 10500 for 7 chairs.
- ✓ 9 chairs.
- ✓ 15 chairs.

3 Which pack?

ANSWER A · 3

i. 6 for Rs 90: 90 ÷ 6 = **Rs 15** a biscuit. 10 for Rs 140: 140 ÷ 10 = **Rs 14**. 15 for Rs 240: 240 ÷ 15 = **Rs 16**.

ii. **The pack of 10** (Rs 14), then **the pack of 6** (Rs 15), then **the pack of 15** (Rs 16). The biggest pack is not always the cheapest.

MARKING SCHEME

- ✓ Rs 15 and Rs 14 a biscuit.
- ✓ Rs 16 a biscuit.
- ✓ The order 10, 6, 15.

4 From dozens to eggs

ANSWER A · 3

i. 3 dozen = 36 eggs. One egg costs 540 ÷ 36 = **Rs 15**.

ii. 375 ÷ 15 = **25 eggs**.

iii. One dozen costs 540 ÷ 3 = Rs 180. 1000 ÷ 180 = 5, with 1000 − 900 = 100 left over: **5 dozen**, and **Rs 100** is left.

MARKING SCHEME

- ✓ Rs 15 an egg.
- ✓ 25 eggs.
- ✓ 5 dozen, Rs 100 left.

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5 A day's wage

ANSWER A · 3

i. 7200 ÷ 6 = **Rs 1200** a day.
ii. 18000 ÷ 1200 = **15 days**.
iii. Nitu earns 1350 − 1200 = Rs 150 a day more, so in 15 days 150 × 15 = **Rs 2250** more. (Or: 1350 × 15 = 20250, and 20250 − 18000 = 2250.)

MARKING SCHEME

✓ Rs 1200 a day.
✓ 15 days.
✓ Rs 2250 more.

6 Does it work here?

ANSWER HA · 4

a. **Yes**: every notebook costs the same. One costs 240 ÷ 4 = Rs 60, so 9 cost 60 × 9 = **Rs 540**.
b. **No**: the kettles boil at the same time, so four kettles still take **about 3 minutes**, not 12.
c. **No**: children stop growing in their teens, so doubling his age does not double his height (he won't be 300 cm tall).
d. **Yes**, if the water flows at the same rate all the time: one bucket takes 6 ÷ 2 = 3 minutes, so 5 buckets take 3 × 5 = **15 minutes**.

MARKING SCHEME

✓ a. Yes, Rs 540.
✓ b. No, about 3 minutes.
✓ c. No, with a reason.
✓ d. Yes, 15 minutes.

7 Sharing the bill

ANSWER A · 3

i. One plate costs 360 ÷ 2 = Rs 180, so 7 plates cost 180 × 7 = **Rs 1260**.
ii. 1260 ÷ 5 = **Rs 252** each.
iii. 2000 ÷ 180 = 11, with Rs 20 left over: **11 plates** (11 × 180 = 1980; a 12th would cost 2160).

MARKING SCHEME

✓ Rs 1260.
✓ Rs 252 each.
✓ 11 plates.

8 Make your own

ANSWER A · 3

For example: **"8 kg of apples cost Rs 960. What do 5 kg cost?"**
960 ÷ 8 = Rs 120 is the cost of **one** kilogram; 120 × 5 = **Rs 600** is the cost of 5 kg.
Any problem is right if 8 of something cost (or take, or hold) 960, and the question asks about 5 of the same thing.

MARKING SCHEME

✓ A problem that matches 960 ÷ 8 × 5.
✓ 960 ÷ 8 = 120, the value of one.
✓ 600, with its unit.

9 Think: the big bag or the small ones?

ANSWER

i. Small bag: 600 ÷ 5 = **Rs 120** a kilogram. Big bag: 2750 ÷ 25 = **Rs 110** a kilogram.
ii. Six small bags cost 6 × 600 = Rs 3600. One big bag and one small bag cost 2750 + 600 = **Rs 3350**, the cheapest way.

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iii. Four small bags cost $4 \times 600 =$ **Rs 2400**, less than the big bag's Rs 2750. But for Rs 350 more the big bag gives 5 kg more, which would cost Rs 600 in a small bag: if the rice will be eaten later, the big bag is the better buy.

MARKING SCHEME

- ✓ Rs 120 and Rs 110 a kilogram.
- ✓ Rs 3350, one big and one small bag.
- ✓ Four small bags, Rs 2400.
- ✓ The big bag gives 5 kg more for only Rs 350.

Marks by level	Knowledge	Understanding	Application	Higher ability	Total
Marks	0	7	15	8	**30**

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